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ABSTRACT

These hearings focused on the impact of the United States decision to leave the United Nations Educational, Scientific and Cultural Organization (UNESCO). Included are prepared statements and/or testimony by: Congressman Jim Leach (Iowa); Jean Gerard (U.S. Ambassador to UNESCO); Paul Baker; William Nierenberg; Thomas Galvin; and A. K. Solomon. Also included in appendices are: (1) additional letters submitted for the record; (2) a U.S. interagency perspective (National Science Foundation) on the natural sciences in UNESCO; (3) a report titled "UNESCO Science Programs: Impacts of U.S. Withdrawal and Suggestions for Alternative Interim Arrangements;" and (4) a report (by Genevieve Knezo and Michael Davey) entitled "Science and Technology Programs in UNESCO: A Description of the Programs and Preliminary Analysis of the Policy Implications of U.S. Withdrawal for Science." This latter report describes the rationale for the U.S. decision to withdraw from UNESCO; UNESCO's science and technology activities; scientists' reactions to and criticisms of the decision to withdraw; the policy implications of withdrawal for science; and issues related to developing program alternatives to UNESCO's science activities. (JN)

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IMPACT ON U.S. SCIENTIFIC RESEARCH OF PROPOSAL TO WITHDRAW FROM UNESCO

ED254423

HEARINGS

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT

AND THE

SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

OF THE

COMMITTEE ON SCIENCE AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES

NINETY-EIGHTH CONGRESS

SECOND SESSION

MARCH 8, 15, 1984

[No. 120]

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IMPACT ON U.S. SCIENTIFIC RESEARCH OF PROPOSAL TO WITHDRAW FROM UNESCO

THURSDAY, MARCH 8, 1984

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT,
Washington, DC.

The subcommittee met, pursuant to notice, at 1 p.m., in room 2325, Rayburn House Office Building, Hon. James H. Scheuer (chairman of the subcommittee) presiding.

Present: Representatives Scheuer, Reid, Michael A. Andrews, Leach, McGrath, Tom Lewis, and Joe Skeen.

Mr. SCHEUER. The Subcommittee on Natural Resources, Agriculture Research and Environment will come to order.

We are very happy to welcome the American Ambassador to Unesco, Ambassador Jean Gerard, to help us in our oversight obligations with Unesco.

We're going to go out of order for just a moment. Our colleague, Congressman Jim Leach, has to make a plane at 2 p.m., so before we commence the normal order of events, I'm going to recognize Congressman Leach for a statement.

STATEMENT OF HON. JIM LEACH, A U.S. REPRESENTATIVE FROM THE STATE OF IOWA

Mr. LEACH. Thank you, Mr. Chairman.

I have a very lengthy statement. I'd like to request it be submitted for the record, and just would like to make a couple comments about it.

Let me just begin by noting that Congress has been concerned with two issues, overwhelmingly, with Unesco. One relates to the Israeli participation issue; the other with the free press. In the last 2 years, partly because of the strong leadership of Ambassador Gerard, we have been quite successful in obviating some of the concerns that we have had priorly on this. I personally feel very strongly that we're going to have to ask the administration ourselves whether we can go forth with an "empty chair" diplomacy and, more successfully, defend Israel as well as our concerns in the free press in the future. I find that very, very difficult to comprehend.

Second, I would like to stress that the history of Unesco is one in which we as a Congress approved participation by a joint resolution, and the administration has taken what I think is a rather

strong step toward a unilateral Executive privilege in determining that we should withdraw without anything except minimal consultation with Congress. Accordingly, I have introduced legislation today to require the President to seek specific authorization from Congress should an Executive recommendation be made to terminate our participation in Unesco itself.

Finally, let me just stress that I appreciate very much the leadership that you have brought to the issue and particularly the concerns that have been reflected about some of the executive management issues at Unesco. But I think we ought to be very careful, as we look at Unesco, to realize that the bigger issue is not the foibles of its management but the role it plays in the world, and that problems associated with human foibles certainly have to be rooted out; but let's not allow one director's mismanagement style to mask our rather large—what I would consider to be ideological—pouting here at home.

Thank you, Mr. Chairman, and I apologize to make a statement and then depart.

[The prepared statement of Mr. Leach follows:]

JIM LEACH

IOWA'S CONGRESSMAN FOR THE FIRST DISTRICT

Statement by

CONGRESSMAN JIM LEACH

before the
Subcommittee on Natural Resources, Agricultural Research and Environment
Committee on Science and Technology
U.S. House of Representatives

March 6, 1984

Empty-Chair Diplomacy in UNESCO

Mr. Chairman, I appreciate the opportunity to appear before you and your colleagues on the subcommittee this afternoon and want to commend you for your leadership in holding these hearings.

The U.S. decision to leave the United Nations Educational, Scientific and Cultural Organization (UNESCO) has enormous philosophical as well as practical implications for the foreign policy of the United States. It is therefore incumbent on Congress to review the Administration's decision carefully and present alternative perspectives, if warranted.

As a former delegate to the U.N. General Assembly, I have witnessed first-hand the corruption in rhetoric that plagues the U.N. system today. American representatives have a responsibility to stand up foursquarely not only for U.S. interests but for the principle of rational dialogue. But in diplomacy, as in sports, it does matter how you play the game, and I am apprehensive that joining too stridently in intemperate word games at the U.N. is not only immature but potentially counterproductive. More profoundly, deserting a principal U.N. agency appears at this time to be an unjustified response to an exaggerated problem.

Quitting is not the American way. Under the circumstances, it implies that we can't stand the heat in the crucible of North-South and East-West debate.

As its name implies, UNESCO deals principally with international education, scientific and cultural concerns. But our decision to abandon ship has extraordinary strategic implications. Indeed, it might well be argued that the Administration's ideological cut-and-run policy imperils U.S. security. After all, in the 20th century, no nation is an island. Security is collective rather than self-willed.

As Americans, we simply must come to grips with the reality that the United States does not now, nor will it ever again, claim as great a percentage of the world's economic and military might as it did at the end of World War II, when the United Nations system was established. Hence, in a very practical sense, our national security today requires that greater emphasis and sensitivity be applied to relations among States and to major international institutions such as the U.N. In a world which appears to have shifted, as Pope John Paul II recently warned, from a "post-war" to a "pre-war" mentality, responsible governments have an obligation to seek to strengthen rather than deprecate the U.N. and its affiliate organizations, like UNESCO.

The Administration needs apparently to be reminded that the UNESCO withdrawal decision is being made at the precise time U.S.-Soviet tensions have returned to dangerous cold war levels and major bilateral arms control talks have been suspended. War rages in two parts of the Middle East, in Afghanistan, in Central America, and in vital areas of Africa. International terrorism is on the rise, placing the internal security of many nations in jeopardy. In addition, UNICEF tells us that some 40,000 children will perish daily from lack of adequate diet and sanitary drinking water. The scale of human suffering, particularly today in Africa, is staggering.

Given the fact that weapons of mass destruction have proliferated and that for the first time in world history civilization itself is jeopardized by man's war-making capacities, the leadership of restraint has emerged as the only rational philosophical imperative of state-to-state relations. Existing international institutions and procedures may be flawed, but the case for retreat from international dialogue is non-existent.

It is in this larger context that we need to examine the Administration's decision to withdraw from UNESCO.

The Constitution of UNESCO begins with these well-known words:

> "The Governments of the States Parties to the Constitution on behalf of their peoples declare: That since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed. . . ."

Since UNESCO's inception 37 years ago, the United States has played a major role in it and the majority of its programs.

As the Administration's recently released "U.S./UNESCO Policy Review" acknowledges: "UNESCO leads the international effort to eradicate illiteracy." UNESCO has done valuable work in education planning and training in developing countries, in collecting statistical data not easily available elsewhere, in coordinating educational efforts internationally, and in the education of the aged, disabled, and women.

In the science sector, the Administration report notes that "UNESCO has been an effective international forum for encouraging scientific debate and cooperation." UNESCO promotes research, broadens access to research data, organizes international scientific efforts on a cost-sharing basis, and offers scientific and technological help to developing countries. Major UNESCO science programs in which the U.S. has an interest include the International Brain Research Organization, the International Center for Theoretical Physics, the International Geological Correlation Program, and particularly the Intergovernmental Oceanographic Commission, which provides marine data to the U.S. Navy and the U.S. scientific community. In addition, the Man in the Biosphere Program, one of UNESCO's most successful science projects, fosters an integrated approach to the world's ecosystems.

In the cultural sector, the U.S. has long supported UNESCO's preservation and conservation activities, and major U.S. institutions, such as the Smithsonian Institution, IWIA, the National Endowment for the Arts, and National Endowment for the Humanities, the Advisory Council on Historic Preservation, and the National Park Service, have participated in UNESCO-related projects. The cultural heritage program, as the Administration's report points out, is one of UNESCO's most impressive achievements. The U.S. was one of the major contributors to the preservation of the Abu Simbel monument in Egypt and has, itself, eight natural and four cultural sites on the World Heritage List.

Even in one of the more controversial sectors of UNESCO activities -- communications -- the Administration's report has a number of positive things to say. Because of UNESCO's activities in this area, the United States has had the opportunity to promote and defend U.S. values and methods in communications. The U.S. has not only not lost in any major debate but has been successful in our leadership efforts to create the International Program for the Development of Communication (IPDC), thus giving impetus for Third World countries to focus on practical as contrasted with ideological communications problems. In addition, UNESCO with our support, assisted in the establishment of Africa's first community radio station in Kenya and was instrumental in giving guidance to the new-owned Caribbean News Agency. UNESCO also funds training fellowships in the U.S. as well as the procurement of U.S. communications equipment.

I take the time to point out the merit of these UNESCO programs because they have been obscured by the Administration's sweeping criticisms.

Everyone who is familiar with UNESCO is well aware of the problems plaguing that institution. They are serious. The Administration's statement of December 29, 1983, announcing the decision to withdraw, charged that UNESCO "extraneously politicizes virtually every subject it deals with," "has exhibited hostility toward the basic institutions of a free society, especially a free market and a free press," and "has demonstrated unrestrained budgetary expansion."

Congress has been fully cognizent of the problems in UNESCO as in many other U.N. agencies and in the General Assembly itself. It is precisely because of this awareness and concern that Congress has, by law, authorized the Administration to take action if Israel is illegally expelled or in any other fashion denied her right to participate, or if UNESCO implements any policy or procedure which has the effect of licensing journalists or imposing censorship or restrictions on the free flow of information. In the case of the first scenario, involving Israel, Congress has authorized the U.S. to suspend its participation and withhold payment of its assessed contribution until any illegal action against Israel is reversed. In the case of the second scenario, in which actions might be taken against a free press, U.S. funding to UNESCO is to be suspended.

Because Congressional concern is so deep as to be reflected in statute it is instructive to examine where UNESCO stands on these two issues at present.

In the case of the Israeli question, Assistant Secretary of State Gregory Newell acknowledged at a hearing held by the Subcommittee on Human Rights and International Organizations on February 7, 1984, that the Israeli question was not a problem for the U.S. and that this particular concern was not a reason for the U.S. withdrawal. In a report to Congress in February 1983 (required under Section 108 of P.L. 97-241) the Administration stated that while there have been a number of unacceptable resolutions on Middle East questions, "the worst excesses have been avoided." It further said that efforts to deny Israel her right to participate, such as had taken place in the IAEA, "have not prospered in recent years in UNESCO." Why? Largely, the report explains, because of the "forceful presentation of U.S. Government views, skillful diplomatic intervention by the Director General, and help of moderates in the Group of 77." Clearly, on this major issue, the U.S. has forcefully presented its case and successfully carried the day.

I would like to add that not only has UNESCO moderated on the Israeli issue, PLO, according to a January article in the Manchester Guardian, "The Israeli Government, concerned about the threat to its own membership, made strenuous efforts to stop the United States leaving UNESCO." The Israeli concern, the article went on to say, "was raised in a confidential 'action memorandum' sent to the Secretary of State, Mr. George Shultz, on December 16, last year. . . ." Later the article says, in quoting the same memorandum, "'The Israelis have expressed concern that with the United States absent, Israel would eventually be ejected from UNESCO.'" As one well-informed diplomat observed, the U.S. decision to withdraw places Israel in a particularly awkward position. "Israel's enemies are always looking for ways to deny it participation in international organizations; consequently, Israeli policy is premised on efforts often strenuous, to join and stay in as many as possible. But, if the U.S. decides at the end of the year to withdraw, and Israel finds itself forced by circumstances to follow, it will have a far more difficult time rejoining UNESCO in the future than will the U.S.

It is unclear to me how the United States can actively defend our own interests, let alone the right of Israel to participate in UNESCO, from an empty chair.

With respect to issues of a free press and freedom of communication, which is the second area in which Congress has taken a firm stand, the Administration reported to Congress just last week that "the Department of State concludes that UNESCO is not, at this time, actively implementing any policy or procedure proscribed by Section 109 of Public Law 97-241. None of the programs included in the Second Medium Term Plan (adopted in late 1982) or approved in the Program and Budget for 1984-85 poses any active, direct threat to a free press." Section 109 of PL 97-241, as my colleagues will recall, states that U.S. funds cannot be used for payments to UNESCO "if that organization implements any policy or procedure the effect of which is to license journalists or their publications, to censor or otherwise restrict the free flow of information within or among countries, or to impose mandatory codes of journalistic practice or ethics."

The Administration's February 1984 report continues by saying that marginal gains were made at the 22nd UNESCO General Conference in the communications sector:

> "On the ideological level, our view that any NWICO is 'an evolving, continuous process,' not an established, defined order, was accepted. Also accepted was our contention that any study of a 'right' to communicate must take into account traditional human rights (as opposed to collective, second generation rights). We successfully introduced new studies to the work program for 1984-85 concerning the 'watch-dog' role of the press, the role of the private media, censorship and self-censorship, and ways to strengthen freedom of information. We were also successful in eliminating projects calling for studies of the 'tasks' of the media, safety of journalists and grants to journalist organizations to study 'codes' of conduct, and implementation of the Mass Media Declaration."

In the Administration's "U.S./UNESCO Policy Review", the Administration also admitted that the recent 22nd UNESCO General Conference debate on this subject "gave evidence of a new and welcome degree of moderation." Although questions remain whether that moderation will increase or diminish, it doesn't take skilled guesswork to figure out that the hand of the Soviets and Third World radicals will be strengthened if the preeminent advocate of democratic values absents itself from future debate.

Dana Bullen, executive secretary of the World Press Freedom Committee, which speaks for various free press organizations in the West, was also quoted in the New York Times on November 17, 1983, as saying, "If anyone is looking for an assault on the media at this conference serious enough to justify United States withdrawal, they won't find it."

We must keep in perspective that UNESCO did not invent censorship, nor the idea of a state-controlled press. Rather, it has become a forum for a debate on these practices. As such, we should not shy away from the opportunity the institution provides to argue for our values -- for a free press and freedom of expression. An activist human rights policy, one would think, would include active advocacy of the principles embodied in our Bill of Rights. The Administration is correct to object -- and object strenuously -- to efforts to sanction controls on a free press. But to retreat when proper advocacy is prevailing strikes many UNESCO observers as an ironic, if not counterproductive, strategy.

It would also appear somewhat ironic for the U.S. to object too strenuously to the politicization of UNESCO while also advocating freedom of communication and freedom of expression. It would be contrary to Western traditions and democratic principles to imply that fair -- perhaps even unfair -- criticisms of the U.S. and the West should not be tolerated in international organizations. Our traditions as codified in the Bill of Rights are based upon the premise of Thomas Jefferson that in the free airing of views, truth would triumph over error. We have a right to be concerned, even enraged at times, over the excessive political rhetoric displayed within the U.N. system, particularly the trashing of the U.S., its allies and Israel by some of its more radical members. But our refusal to participate in UNESCO could well send a message that the U.S. is reluctant to rely on the outcome of the ongoing battle of words and that we are not confident our philosophical position will prevail. Some might also conclude that the flip side of refusing to do battle with words is a potentially excessive reliance on military means to resolve international disputes.

We must all acknowledge that although the U.S. may be the target of considerable criticism that lacks justification there is an element to that kind of free expression of views that is quite healthy. To repeat a point made in a different context earlier, it is difficult to understand how we can more effectively protect our national interests in a free press and the free flow of information from an empty chair.

Likewise, the Administration also objects to other "statist" concepts debated at UNESCO such as the "New International Economic Order" and the "rights of peoples." The merits of our position aside, I fail to understand how the U.S. will defend the interests of its business community, promote the idea of a free market and stand up for its human rights principles if it absents itself from the very fora from which competing ideas are debated.

Finally, some comments on the budget issue are in order. Fiscal restraint is the watchword these days in Washington and around the world. However, it is curious to note that while the Administration is correct in charging UNESCO with program growth, the Administration's budget figures show an actual decline of some 13 percent in UNESCO's 1984-85 biennium as calculated in nominal dollars. UNESCO has done a better job in restraining its budget in the last two years than the Reagan Administration and Congress have our own.

It is also important to note that the budget growth has not been as "unrestrained" as the Administration asserts. The original budget proposed by UNESCO called for an increase of some 10 percent in program growth but due to efforts by member states to bring that growth rate down, a "Nordic Compromise" was finally accepted by the General Conference which brought the growth rate down to the 3.0-5.5 percent range. It is precisely because of budget concerns expressed by the U.S. and other significant donors that UNESCO moderated its position. Again, it would appear we are cutting and running, despite substantial success in getting our way.

It should also be pointed out that UNESCO expenditures under that budget have significant spin-off benefits for the U.S. The Administration reported last year that "fellowships to Americans and foreign students studying in the United States, procurement of U.S. equipment, and consultant's fees and payments to American staff, amount to about 40 percent of the value of the U.S. contribution. Similarly, United States prominence in UNESCO's science and education sectors creates markets for U.S. scientific and educational products and materials."

Mr. Chairman, it is difficult to understand what caused the Administration to take so drastic an action as to serve notice of its intent to terminate membership in UNESCO. It is unclear what other alternatives -- short of total withdrawal -- were considered nor why they were rejected in favor of this radical option.

In the report to Congress last year required under Section 108 of PL 97-241, we were told by the Administration that "U.S. interests are generally well served by UNESCO programs, which are, for the most part, non-political and which can most effectively be pursued through international cooperation." The same Administration report also said "UNESCO is a major forum for U.S. multilateral diplomacy. As such, it provides the U.S. with an opportunity to promote U.S. (and Western) values and methods -- particularly in the Third World."

Why then has the Administration taken the decision it has to withdraw from UNESCO?

And, if the latest General Conference was as constructive as the Administration reported it to be, why has the U.S. concluded that UNESCO is more beyond hope this year than last?

It would appear that strong ideological and/or domestic political concerns intervened in a process of what would otherwise have been a rational, professional calculation of U.S. interests, benefits, and problems in UNESCO. The language of U.S. criticism to date has been exceedingly strong but surprisingly ill-defined. For the Administration to refuse to produce a detailed case is to acknowledge implicitly that there may be holes in that case. And for the Administration to refuse to submit a laundry list of changes it wants in UNESCO procedures is to imply ideological hardheadedness and a desire not to be serious about reform.

The decision to withdraw appears to represent as much an indictment of U.S. policy and performance within UNESCO as it represents an indictment of UNESCO itself. The greatest democracy if the world has been brought to its knees in this important international forum as much by irrational forces at home as those abroad. Political leadership in America has appealed to the lowest rather than the highest instincts of the body politic and in this case allowed nationalistic irrationality to prevail.

Not long ago, we might recall, the U.S. Representative to the U.N. suggested that perhaps we should consider moving the U.N. headquarters to Moscow for six months out of the year. Another U.S. Ambassador said he would gladly stand at the dock and wave goodbye to the U.N. delegates. New York Mayor Ed Koch jumped into the fray by calling the U.N. a "cesspool," and the Senate chimed in by adopting the so-called Kassebaum amendment, which called for major cuts in our contributions to the U.N. and four of its agencies, including UNESCO.

Fortunately, cooler heads prevailed and more extremist perspectives were avoided. The President himself went on record opposing the Kassebaum Amendment and told a gathering of U.N. delegates in New York that the U.S. was proud to be the home of the United Nations.

Now, as we face the impending withdrawal of the United States from UNESCO, it is my hope that cooler heads again will prevail and that the President will take a close look at what his subordinates have recommended. There is evidence a review process is under way, but it is unclear how seriously it will be conducted. In a memorandum and [illegible] memorandum from NSC Adviser Robert MacFarlane to the Secretary of State last December, MacFarlane states that the decision to withdraw was made with reluctance and that the President [illegible] continues to support every effort to achieve meaningful changes over the next year. That memorandum also indicates the President's desire that U.S. representation to UNESCO be upgraded and that a panel of individuals from the academic, media and corporate world be appointed to advise the Administration on this matter. Finally, MacFarlane indicated White House willingness to review the decision if concrete changes materialize in UNESCO this year.

In a second unclassified memorandum dated February 11, 1984, MacFarlane stated that in order to carry out the President's wishes, [illegible] a major campaign to turn UNESCO around during 1984. He suggests that such a campaign might include an action plan, the mobilization of international support and more involvement in UNESCO personnel assignments.

In this context it would seem particularly appropriate for Congress to exercise a major oversight role this year. The minimal consultation which took place with Congress about the withdrawal decision reflects unilateral expansion of Executive prerogative. It belies serious efforts to craft bipartisan, bi-institutional approaches to foreign policy.

Accordingly, I have introduced legislation which would go beyond a simple requirement of consultation, to require the President to seek specific authorization from Congress should an Executive recommendation be made to terminate U.S. membership in UNESCO. The Constitution is silent on the subject of terminating international agreements of this nature. Since joining UNESCO in 1946 involved a partnership effort on the part of the Executive Branch and the Congress and an authorizing resolution passed by both Houses it would seem logical that the decision to terminate our membership would likewise be made on a partnership basis. As it stands now, the Congress has simply been presented a fait accompli.

Membership in international organizations of this nature should never by considered cast in permanent stone. But when termination of involvement in an organization of such stature is under consideration, it is incumbent on the Administration to bring its case to the Congress and the American public. A jointly made decision would certainly give any Administration a stronger position in its efforts to protect and advance American interests.

In this connection, Mr. Chairman, I want to commend you for calling for an investigation of allegations of mismanagement against UNESCO by our own General Accounting Office. There have been allegations of mismanagement, both with respect to finances as well as personnel. Congress should rightfully be concerned with these allegations and if there is merit to them we should work to rectify the situation. But let's be careful to keep petty abuses of power in perspective. Problems attendant with human foibles should be rooted out, but let's not allow concern for one director's management style mask an ideological pouting here at home. To refuse to stay and fight corruption from within is a denial of international responsibility. It may be a form of corruption itself.

Given the weakness of the Administration case as presented to date, I personally welcome Chairman Schneer's initiative in seeking the involvement of an outside body to assist in evaluating UNESCO's budgetary problems. But whatever the result of an independent investigation of UNESCO's finances, it should be clear that few in Congress favor the disengagement of the United States from the entire United Nations system.

The American people are more deeply committed to the U.N. than many of its critics recognize. A CBS/New York Times poll, for instance, conducted in September 1983 revealed that 89 percent of the public favors the U.S. staying in the U.N. while only five percent favors withdrawal. In commenting on the results of the poll, CBS News noted that the Gallup Organization has asked about U.S. participation in the United Nations since 1951. It has consistently found the public supportive of U.S. participation. But never in its history of asking that question have as few as five percent favored getting out.

The American people seem to understand better than American politicians that isolationism has no place in the world today. If there is any hope of diminishing intolerance and hostility among nations it must come through a greater international commitment to education and mutual understanding which UNESCO symbolizes. Security in the 20th century may in the final measure relate as much to education and cultural advancement as the acquisition of increasingly costly and sophisticated arsenals of war. In a world in which weapons of mass destruction exist, arms control -- while a prerequisite -- is not enough. It is imperative to build up international organizations and advance international techniques of conflict resolution. Centuries ago American settlers could draw wagons around a campfire and provide protection against Indians, but today the only real protection again nuclear weapons is an advancement of human understanding.

Mr. Chairman, I want to thank you once again for the opportunity to share my views on this subject.

* * * *

Congressman Jim Leach
U.S. House of Representatives
1514 Longworth House Office Building
Washington, D.C. 20515

98TH CONGRESS
2D SESSION

H. R. _____ HLC

IN THE HOUSE OF REPRESENTATIVES

Mr. LEACH of Iowa introduced the following bill; which was referred to the Committee on _____

A BILL

TO AMEND THE JOINT RESOLUTION RELATING TO UNITED STATES PARTICIPATION IN THE UNITED NATIONS EDUCATIONAL, SCIENTIFIC, AND CULTURAL ORGANIZATION.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the joint resolution entitled ''Joint Resolution providing for membership and participation by the United States in the United Nations Educational, Scientific, and Cultural Organization, and for other purposes'', approved July 30, 1946 (22 U.S.C. 287m--287t), is amended by adding at the end thereof the following:

''SEC. 9. The United States shall not terminate its membership in, or otherwise suspend its participation in and contributions to, the Organization, unless such action is required by section 115 of the Department of State Authorization Act, Fiscal Years 1984 and 1985 (relating to suspension of United States participation in the United Nations if Israel is illegally expelled) or by section 109 of the Department of State Authorization Act, Fiscal Years 1982 and 1983 (relating to the imposition of restrictions by the Organization on freedom of the press and the free flow of information), or unless such action is specifically authorized by law.''

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Mr. SCHEUER. Thank you, Congressman.

I have also a letter here from Congressman Dante Fascell, chairman of the Foreign Affairs Committee, expressing regret at not being able to join us and pledging continued cooperation in the joint investigation carried on by the Foreign Affairs Committee and the Science and Technology Committee. There being no objection, I'll put this in the record along with Congressman Leach's statement.

[Letter from Mr. Fascell follows:]

DANTE B. FASCELL, FLA., CHAIRMAN
LEE H. HAMILTON, IND.
GUS YATRON, PA.
STEPHEN J. SOLARZ, N.Y.
DON BONKER, WASH.
GERRY E. STUDDS, MASS.
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JOHN J. BRADY, JR.
CHIEF OF STAFF

Congress of the United States
Committee on Foreign Affairs
House of Representatives
Washington, D.C. 20515

March 8, 1984

The Honorable James Scheuer
Chairman
Subcommittee on Natural Resources, Agriculture Research
and Environment
Committee on Science and Technology
Room 388 House Annex #2
Washington, D.C. 20515

Dear Jim:

Thank you for your invitation to participate in your subcommittee's oversight hearing on UNESCO with the Hon. Jean Gerard, U.S. Ambassador to UNESCO on Thursday, March 8. A previous commitment to meet with the U.S.-Canadian Parliamentary Group in Puerto Rico prevents my being able to join you.

I did, however, want to let you know how important I consider your hearing with Ambassador Gerard for our continuing oversight of U.S. policy in UNESCO this year. U.S. relations with UNESCO have been a major concern of both the Committee on Foreign Affairs and the Committee on Science and Technology. I appreciate your recent efforts to gain a commitment from Director-General M'Bow to allow a GAO study of the Organization. Staff have met with the GAO and hopefully the GAO will begin its review within 4-5 weeks. In this regard, several colleagues and I have written to the Secretary of State asking him to instruct Ambassador Gerard to provide the GAO with every assistance in order to facilitate that study. A copy of the letter to the Secretary is enclosed.

The Committee on Foreign Affairs discussed the issue of U.S. withdrawal last Thursday and adopted an amendment to the Foreign Assistance Act of 1984 calling on the President to create a bipartisan panel of experts to evaluate and monitor U.S.-UNESCO relations over the next year and report to the Congress their findings by October 1, 1984; to upgrade the U.S. Mission to UNESCO and to consult with the Congress before making any final decision on UNESCO.

With best wishes for a successful hearing, I am

Sincerely yours,

Dante B. Fascell
Chairman

DBF:pgj
Enclosure

Mr. SCHEUER. This hearing will be the first of several hearings that will be conducted by the Science and Technology Committee and the Foreign Affairs Committee on the subject of American participation in Unesco, the United Nations Educational, Scientific, and Cultural Organization. This subcommittee has a long history of involvement with Unesco programs, particularly those involving environmental research and science in general. For example, last year our subcommittee held a hearing on Unesco's excellent man and the biosphere program.

We are privileged to have here this afternoon the distinguished American Ambassador to Unesco, Jean Gerard.

Ambassador Gerard, during her 3 years at Unesco, has established a well-deserved reputation for candor and for effective advocacy of American views. The position of Ambassador to this 161-member international organization is one which requires nerves of steel and a commitment to principle that is tested daily. She has these qualities, and she's earned the respect and admiration of the international diplomatic community, friend and foe alike.

Ambassador, your appearance here today represents the first such appearance at a congressional hearing since the Reagan administration formally announced American withdrawal from Unesco effective the end of 1984. One of the major reasons given by the administration for withdrawal is familiar to all of us, that the organization has become overly politicized, seemingly obsessed with virulent anti-Western and blatantly, viciously anti-American activities. We don't intend to dwell here this afternoon on such offensive programs as the new world information order, providing for the licensing of news reporters and seen by many as a guise for state control over a free press. We and many of our Western allies, and even many Third World countries, are clearly uncomfortable with such activities and their obvious incompatibilities with the noble goals of Unesco, the goals of promoting cultural, scientific, and educational cooperation between the developed and undeveloped nations of the world. We will be addressing these concerns in other forums, fora, on other days.

Another major area of concern with Unesco's activities falls into the area of budgetary and personnel practices. There have been serious charges raised by responsible persons in many different countries that the financial and personnel management of Unesco has simply gotten out of control. A perceived lack of accountability to member states and a frustrating lack of access to such simple and rudimentary matters as the day-to-day operating activities of the organization budget and the like, have given rise to some fairly ugly speculation as to what is actually being done with the organization's funds. It should be unnecessary to point out that we in Congress have an obligation and a duty to look into these financial questions. Our country contributes 25 percent of Unesco's budget. The American taxpayers contribute, each year, more than $50 million to Unesco's operation.

It was my concern, for the integrity of Unesco's financial operations and the obvious interest of the American taxpayer, that led me to propose to the organization's Director-General, Amidou Mahtar M'Bow, that Congress conduct an independent review into the fiscal and management and personnel practices of Unesco.

With the active support of Representative Don Fuqua, chairman of the full Science and Technology Committee, and of our colleagues on the Foreign Affairs Committee, Congressman Dante Fascell, Congressman Dan Mica, and Congresssman Gus Yatron and others, we were able to conclude an agreement with Unesco. This agreement will provide for a team of professionals from the General Accounting Office who will commence a thorough, in-depth review of Unesco's financial, fiscal, management, and personnel practices. For his part, the Director-General of Unesco, Mr. M'Bow, has pledged his cooperation in providing GAO with full access to the organization's financial and personnel records and full access to staff at every level for such interviews as GAO wishes to carry out.

Representative Dante Fascell, chairman of the Foreign Affairs Committee, subcommittee Chairmen Gus Yatron and Dan Mica, Chairman Don Fuqua and I have jointly signed the formal request to GAO to activate the review process. We have heard from them; it is going ahead.

Our subcommittee is pleased with the role we have played in facilitating this investigation and we look forward to supporting our Foreign Affairs Committee colleagues as they assume, properly, the leadership in the implementation of this ongoing investigation.

It is expected that the GAO investigating team will be on site in Paris within the next few weeks. We have outlined our specific areas of concern to them and have charged them with completing a thorough review, expeditiously, so that we may have the benefit of their analysis well in advance of the date for American withdrawal, namely, December 31 of this year. We have also asked them to supply us with interim reports so that their preliminary findings can become part of the deliberative process between now and the end of this year.

We have been assured that these uncompromising professionals, known and admired for their expertise and dedication, will expend whatever effort is necessary to ferret out all of the details, to dispense with all of the major allegations, and to give us the unvarnished facts with which to proceed.

I am very much looking forward to Ambassador Gerard's testimony here today. She is in a unique position to give us the background on the process that was followed by the administration in reaching its withdrawal decision. She can also give us the benefit of her observations on the level of cooperation our independent investigation, our independent congressional investigation is likely to receive from the administration. We will also be interested to hear her views on the reaction of our allies and, possibly, our adversaries, to the investigation itself.

Now, in the order in which they appeared—actually, even before lunch—Congressman Ray McGrath from New York, my distinguished colleague from the Empire State.

Mr. McGRATH. Thank you very much, Mr. Chairman.

Let me first congratulate you on holding these hearings and making a personal trip to Paris to investigate the problems that we read about and see on the media with regard to Unesco.

Let me ask unanimous consent to revise and extend my remarks, and to welcome you, Ambassador Gerard. We have all heard of the problems which preceded the administration's announcement of

possible pull-out of Unesco. We are very much aware, in our own congressional districts of a fierce, America-first philosophy, let's take care of our own situation first and maybe we'll worry about the world's somewhere down the line, and we're concerned about the politicization of the agency. We understand our contribution and what we perhaps do or do not get out of that contribution. We are somewhat concerned of the amount of money that's being spent of the total budget in Paris and the number of personnel that are based in Paris as compared to what ought to be around the world. So we have many, many issues that we would like to discuss and perhaps get some insights and highlights on from you, and we are delighted that you are here to testify before our subcommittee. I want to thank you for coming.

Mr. SCHEUER. Congressman Tom Lewis of Florida.

Mr. LEWIS. Thank you, Mr. Chairman.

Madam Ambassador, we are glad to have you with us today. I have been concerned for a number of years about the deterioration of the U.S. position with Unesco and certainly have not been an advocate of Unesco over a number of years; so later on, if some of my questions seem of an adversarial role, you'll understand. But I'm sure they're not, in any intent, used to look at your leadership as something less than the greatest.

Over the years I have watched the degradation of Unesco, and feel that the United States should not have been a member over the years. Maybe, from what the GAO has to say and what comes out of this hearing, I may be able to change my mind.

Thank you, Mr. Chairman.

Mr. SCHEUER. Thank you.

Congressman Mike Andrews of Texas.

Mr. ANDREWS. Mr. Chairman, I have no opening statement.

Mr. SCHEUER. All right.

Ambassador Gerard, the floor is yours. Your statement will be printed in full in the record, so why don't you just sit back and relax and chat with us informally, tell us what's on your mind, and take such time as you may need. We have no other witnesses today so we're under no time pressure, and when you're finished I am sure we'll all have questions for you.

I want to express again our joint, deep pleasure in having you with us, and we look forward to your remarks.

STATEMENT OF HON. JEAN GERARD, U.S. AMBASSADOR TO UNESCO

Ms. GERARD. I think if I may, I would like to read my statement and then, of course, I would be happy to answer as well as I can any questions that you have.

Mr. Chairman, distinguished members of the committee, I appreciate the opportunity to testify before you. My own perspective on Unesco, and American interests there, is that of close observer and participant. Our relations with the organization and our effort to make the most of our membership and investment there have been my daily preoccupation for three years now.

Next week, when you hear Assistant Secretary of State Newell, you will have the opportunity to address Unesco policy issues in

their broad framework. My approach necessarily is from the Paris perspective. I hope it will prove a useful addition to the other information and insight you will receive in the course of your hearings.

I shall attempt to deal, again from the Paris viewpoint, with two questions in this statement. First, on what grounds have we concluded that Unesco no longer serves the U.S. national interest, the interests of the free world? Second, what drove us to the conclusion that Unesco could not be rehabilitated by continued U.S. membership?

In answering the first question, I shall highlight problems which illustrate the incompatibility of Unesco with U.S. interests. I shall by no means attempt to present a complete list of Unesco's failings. My public statements and statements addressed in various Unesco fora over the past 2 years present a more comprehensive picture. Criticisms we have made in Paris are exceedingly well documented, and they have been consistent.

Unesco has failed, first of all, to restrict its activities to those which fall within its traditional, agreed purview, within its constitutional mandate. Consequently, its resources—intellectual, managerial, financial—are spread too thinly across too wide a field of activity. An example of this expanding purview is Unesco's entry into peace and disarmament activities, for which Unesco has, for 1984-85, budgeted in excess of $1 million. Unesco is not the appropriate forum for peace and disarmament. These questions are properly dealt with elsewhere—at the Conference on Disarmament in Geneva, in the U.N. General Assembly in New York, as well as in more restricted fora like the Conference on Disarmament in Europe in Stockholm.

In addition to straining the organization's resources and trespassing on the work of other international fora, Unesco's disarmament activism converges dangerously with the goals of the Soviet Union's "peace offensive." The disarmament programs are aimed, for the most part, at sensitizing public opinion. For example, the Unesco draft program and budget for 1984-85 announces its intention to make certain categories of students, "such as future researchers and those training for posts of responsibility, aware of their rightful role in averting threats of war." Clearly, the only students who will be made aware of their "rightful role" will be those who study in free societies. It is also clear that it is these students who have no need of such instruction, since they already have access to information of all kinds, as well as views across the ideological spectrum. It is students in the Soviet Union and its satellites who truly need such access, and their governments will assure that they do not get it. Thus Unesco's involvement in this issue, where it does not belong in the first place, is doubly wrongheaded.

The most well-publicized of Unesco's anti-Western tendencies, and you've mentioned this already, has been its crusade to establish a new world information and communication order, known in its acronym as "NWICO." It is true that Unesco has been foiled so far in its attempt, to draw up an international code of conduct for journalists. That, however, is only a very small part of the story. Unesco's debates, studies and declarations on the subject over the course of more than a decade have shaken the conceptual founda-

tions upon which rest the western notion of a free press. Unesco has devised a formula which substitutes for the traditional professional responsibilities of a journalist to seek out and report facts, a *newly-minted series of social and ethical responsibilities* for ridding the world of its evils. In its application, the formula leaves the press open to state intrusion into the content of news.

To cite concrete examples, one Far Eastern country's decision in June 1983 to prohibit international news agencies from distributing directly to its newspapers was justified as an "exercise in national sovereignty;" and as an effort to "help correct the imbalance in the flow" of information between the developed and developing countries. These phrases are popular refrains of the campaign at Unesco for a NWICO and are familiar to anyone who has had even minimal exposure to the Unesco press debate. The state-controlled news agency in a Western Hemisphere nation, which claims as its standard of journalistic practice the 1978 Unesco mass media declaration, provides a compelling example of how that document may be used to suppress the reporting of facts in favor of the propagation of a nonfactual "revolutionary truth." These are only a few pieces of an alarming body of evidence indicating that Unesco has directly influenced antifree press policies and legislation. I believe, sadly, that the repercussions of Unesco's drive for a new world information communications order will be felt in the world for a long time to come.

A second major problem, in the management area, is the inadequacy of program performance information furnished to governments who are, of course, charged with oversight of the programs. During each regular 2-year program cycle, both the Executive Board and the General Conference are inundated with material which reflects favorably upon whatever Unesco undertaking is discussed therein. Rarely, however, is information given about programs which are failing and not fulfilling their objectives; or programs which are inefficiently executed; or which are politically motivated; or which are just wasteful. Cost effectiveness analysis at Unesco is just unknown. Such analysis does not exist to any extent; there is a system-wide reticence against it. The results of this crucial management deficiency are, one, widespread inefficiency in program execution and, two, continuous manipulation by the Secretariat of member states, which are thereby incapable of discharging their constitutional responsibilities. It is the member states who should be setting the program priorities.

A third serious problem has been Unesco's unwillingness to exercise budgetary restraint. The U.S. administration decided in 1981 that, given economic realities then prevailing in the world, and given the determined efforts of nations throughout the world to curb government spending, it would be advisable for U.N. system organizations to restrict themselves to zero net program growth in their budgets. Many countries came to similar conclusions. We do not think that this was an unreasonable position. The fact is that every other U.N.-family organization has come much closer than Unesco to meeting the challenge of zero net program growth, and in some, even had program decreases. Unesco, by contrast, approved a 1984–85 budget at its November General Conference calling for 3.5 percent real program growth—this figure according to

the Secretariat's own calculation. We ourselves calculate a figure of 3.8 to 5.5 percent real net growth. This was down from an original proposed increase of 9.7 percent. That reduction was interpreted by some as representing a major concession by the Unesco Director General. We thought that the budget increase still was disproportionately high, and we voted against it. Ten other countries expressed their nonsupport by abstaining. These 11 countries pay almost half of Unesco's budget.

These problems, then—the entry into highly contentious areas such as disarmament, the drive for a new world information and communications order, the lack of necessary management information, the straining of organizational resources, irresponsible budgetary growth—are only a representative part of what has gone wrong at Unesco. Yet, the question remains, "Why can't the United States work for reform from within the organization?" We have reluctantly concluded that all our efforts to achieve significant reform were foredoomed by the institutional deficiencies and malfunctioning of Unesco.

The governing bodies of Unesco no longer work as they were designed to. A redistribution of power has taken place among the governing organs of Unesco. Power has been usurped or transferred from its representative bodies [the General Conference and the Executive Board] by the administrative arm, the Director General and the Secretariat.

The General Conference is, in theory, the supreme legislative and policy body of Unesco. Under the constitution, it is supposed to "determine the policies and main lines of work" of the organization. It has not and it does not do so. Furthermore, it is not able to do so. It has become hopelessly dependent upon a Director General and a Secretariat which sets its agenda, controls its pace, drafts its resolutions and in other ways arrogates unto itself functions and responsibilities which should be discharged by the General Conference. The General Conference has become an institution which rubber-stamps policy rather than formulating it.

The Executive Board is charged with responsibility for examining the program and budget of the organization, submitting it to the General Conference, and overseeing the execution of the program. Smaller than the General Conference, the Executive Board—which has 51 members now—was meant to be an instrument for the detailed review of program and budget formulation and execution; of senior personnel appointments; and of a variety of other matters. But the Executive Board, like the General Conference, has lapsed into a condition of excessive dependence upon the Secretariat. Normally, the Board does not directly question senior policymaking personnel. Too often it complacently accepts the program and budget documentation provided by the Secretariat without demanding the further information necessary for effective oversight. Requests for specific information not contained in the documentation can be ignored. There is often a sort of straw-vote on whether a given request for information is even proper for the asking. Replies to these requests are given in prepared statements which are not subject to further inquiry. There is none of the informal give-and-take over budgetary and other matters customary in parliamentary systems. Above all, the pressures of time and a full

agenda serve to stifle any initiative intended to break this pattern of complacency.

Now, Mr. Chairman, let me turn to the three points you inquired about in your letter to me. The first concerns the courses of action being pursued by the U.S. Government and by other member nations to improve programs and management at Unesco. I have interpreted this question in the broadest possible manner to include not only efforts directed at the preparation of programs and budget and their method of review by Unesco's organs, but also efforts directed at reform of the Secretariat itself in its structure, personnel administration, allocation of funds, and execution of the program.

The United States has been in the forefront of efforts to improve Unesco's budgetary, program, and management practices. It has done so both by introducing initiatives and by encouraging its western colleagues and others to propose reforms of their own. Let me illustrate.

In 1979 the United States volunteered to undertake for the Executive Board a study which eventually bore the name, the relation of planning, programing, budgeting, and evaluation to the implementation of the program of the Organization. It was prepared by Dr. Stuard Portner, former Assistant Secretary for Management of the Organization of American States. The Portner study noted that Unesco utilized processes of planning, programing, budgeting, and evaluation, but said that the time had come for refinement of these processes to make them more meaningful tools of management for the governing bodies and the Secretariat. To this end, it offered some 15 specific, technical recommendations to improve Unesco's programmatic and budget practices. As far as we can ascertain, the report was filed and its recommendations largely ignored.

In 1980 in Belgrade, at the 21st Unesco General Conference session, New Zealand, after extensive consultations with the United States and other Western nations, introduced a major resolution requesting the Unesco Executive Board inter alia "to evaluate the budgeting techniques of the Organization for the efficient implementation of the second medium-term plan of Unesco." This resolution met with the following strong riposte from the Director General in his closing speech:

> I am struck by the way in which this resolution puts together budgeting, management and program techniques, on the one hand, and the constitutional responsibilities of the governing bodies and the Director General, on the other hand * * * I should like to point out that, while the governing bodies are responsible for taking decisions concerning the program and budget, it is the constitutional responsibility of the Director General to manage the resources made available to the Organization to carry out the program and to report thereon to the governing bodies.

At the Extraordinary Session of the General Conference in 1982, the United Kingdom, again after consultation with the United States and other Western countries, introduced a major resolution on evaluation, outlining in considerable detail measures which the Organization might pursue to improve its program efficiency. After considerable discussion, the resolution was for all practical purposes shelved. During the same meeting, the U.S. cosponsored with Western countries three other resolutions concerning the methods of work of the General Conference and the preparation of the future form of the program and budget of the Organization. The

Director General's comments on them are replete with the strongest objections. Although the resolutions eventually passed, most of them were stripped of their innovative provisions and have not been complied with.

In 1983, at the 22d Unesco General Conference session, the United States submitted a resolution inviting the Director General to seek the assistance of the U.N. joint inspection unit to examine Unesco's budgetary techniques and to report its recommendations on the applicability of these techniques for consideration by the 23d General Conference session. The resolution was soundly defeated because of the opposition of the Director General.

In addition to these efforts at reform of program, budget, and management, our permanent delegation has over the past 3 years made a number of important policy statements bearing on improvements in Unesco. For example, I laid out in lengthy critiques at the Executive Board sessions of September 1982 and June 1983, the U.S. position on each major Unesco program for 1984-85 and on significant management and budgetary issues. Particular attention and criticism were directed at communications, human rights and budget issues as well as at questionable policy proposals related to reflection on world problems, disarmament, philosophies of development, and management. The language was forthright. I stated that I did not believe that support for Unesco would be forthcoming without significantly greater budgetary restraint. I noted that most of the proposals for Unesco's major program of strategies for development were prime candidates for budget pruning. I warned that the program on peace and human rights would move the Organization in increasingly contentious directions far beyond Unesco's competence. These remarks were supplemented at the 22d General Conference session by a score of presentations in the working commissions and through the submission of a dozen draft resolutions expressing U.S. opposition to specific program actions and to the budget as a whole. As you know, the United States was the only country to vote against the overall budget.

Let me turn now to a second question posed in Congressman Scheuer's letter, the status of the U.S. Government's evaluation of the conditions necessary for its continued participation in Unesco.

As you know, Mr. Chairman, the United States has announced its firm intent to withdraw from Unesco at the end of 1984 and, therefore, has not elaborated on conditions which would cause us to remain. The administration's decision is evidence that it did not judge a turn-around in Unesco a likely possibility in the short term. Nonetheless, we will be attentive to significant structural and programmatic changes over the coming months, and indeed are actively encouraging such change.

Although we have no list of conditions for reconsideration of our withdrawal decision, Unesco can be in no doubt as to our objections and well-founded complaints about the Organization. There are a number of possible remedies for those complaints. Some should be obvious, such as the adoption of a budget of zero net program growth. Others may be less obvious to the outside observer, but would include things like reduction of program support for disarmament and the so-called new world information and communication order, endorsement of the primacy of individual human rights

vis-a-vis so-called "collective" rights, rule changes to permit increased democratic voting and deliberating methods, such as use of secret votes.

Perhaps I can further illustrate what kinds of changes are necessary in Unesco by describing some of the preliminary views of one of our close allies. A partial list of that country's suggestions includes the following.

The implementation of the current program must take account of continuing United States and other countries concerns about freedom of the press, human rights, and peace and disarmament. The draft program for 1986-87 should give greater priority to the core programs in education, science and culture.

There are other recommendations that the various countries are coming up with, and I think it's important—and I've stressed this to the delegates from the other member countries—this must be all of us working together, not one country or one group which should set the pattern.

Because of time limitation I have jumped over some of these things because I think you want to get down to the questions.

The third specific area that the chairman has requested that I address in my testimony is the need for comprehensive review or audit of alleged mismanagement of Unesco personnel, program administration, budgeting and finance. I have already outlined the administration view that there are considerable problems in this area, and more detail can be found in the U.S./Unesco policy review which we have just issued. Whether or not further review in this area is necessary and required is for the judgment of the Congress.

I welcome most heartily such important and far-reaching initiatives. I note in this regard with satisfaction that Congressmen Fascell, Yatron, and Mica, in a letter to Secretary Shultz of February 29, 1984, indicate that GAO has been requested to begin immediately a review of U.S. participation in Unesco, with special reference to budget and management issues. A related GAO review initiated within the past year remains underway. I of course stand ready to lend the fullest cooperation to these and any further efforts of the Congress.

Mr. Chairman, it is with gratitude that I close this statement: gratitude for the opportunity to discuss our efforts and challenges at Unesco and my work of the past 3 years. It is, after all, in the minds of men that the ultimate battle for freedom will be won. In the words of Thomas Jefferson, the price of freedom is eternal vigilance.

Thank you.

[The prepared statement of Ambassador Gerard follows:]

TESTIMONY OF

AMBASSADOR JEAN BROWARD SHEVLIN GERARD

Mr. Chairman, distinguished members of the Committee.

I appreciate the opportunity to testify before you. My own perspective on UNESCO, and American interests there, is that of close observer and participant. Our relations with the organization, and our effort to make the most of our membership and investment there, have been my daily preoccupation for about three years now. Next week when you hear Assistant Secretary of State Newell, you will have the opportunity to address UNESCO policy issues in their broad framework. My approach necessarily is from the Paris perspective. I hope it will prove a useful addition to the other information and insight you will receive in the course of your hearings.

I shall attempt to deal, again from the Paris viewpoint, with two questions in this statement. First, on what grounds have we concluded that UNESCO no longer serves the U.S. national interest? Second, what drove us to the conclusion that UNESCO could not be rehabilitated by continued U.S. membership?

In answering the first question, I shall highlight problems which illustrate the incompatibility of UNESCO with U.S. interests. I shall by no means attempt to present a complete list of UNESCO's failings. My public statements and statements addressed in various UNESCO fora over the past two years present a more comprehensive picture. Criticisms we have made in Paris are exceedingly well documented.

UNESCO has failed, first of all, to restrict its activities to those which fall within its traditional, agreed purview. Consequently, its resources -- intellectual, managerial, financial -- are spread too thinly across too wide a field of activity. An example of this expanding purview is UNESCO's entry into peace and disarmament activities, for which UNESCO has for 1984-85 budgeted in excess of $1,000,000. UNESCO is not the appropriate forum for peace and disarmament. These questions are properly dealt with elsewhere -- at the Conference on Disarmament in Geneva and the United Nations General Assembly in New York as well as in more restricted fora like the Conference on Disarmament in Europe in Stockholm.

In addition to straining the organization's resources and trespassing on the work of other international fora, UNESCO's disarmament activism converges dangerously with the goals of the Soviet Union's "peace offensive." The disarmament programs are aimed, for the most part, at public opinion. For example, the UNESCO draft program and budget (1984-85) announces its intention to make certain categories of students, "such as future researchers and those training for posts of responsibility, aware of their rightful role in averting

threats of war". Clearly, the only students who will be made aware of their "rightful role" will be those who study in free societies. It is also clear that it is these students who have no need of such instruction - since they already have access to information of all kinds as well as views across the ideological spectrum. It is students in the Soviet Union and its satellites who truly need such access, and their governments will assure they do not get it. Thus UNESCO's involvement in this issue, where it does not belong in the first place, is doubly wrongheaded.

The most well-publicized of UNESCO's anti-western tendencies has been its crusade to establish a New World Information and Communication Order (NWICO). It is true that UNESCO has been foiled so far in one effort - to draw up an international code of conduct for journalists. That, however, is only a very small part of the story. UNESCO's debates, studies and declarations on the subject over the course of more than a decade have shaken the conceptual foundations upon which rests the western notion of a free press. UNESCO has devised a formula which substitutes for the traditional professional responsibilities of a journalist to seek out and report facts, a newly minted series of social and ethical responsibilities for ridding the world of its evils. In its application, the formula leaves the press open to state intrusion into the content of news.

To cite concrete examples, one Far Eastern country's decision in June 1983, to prohibit international news agencies from distributing directly to its newspapers, was justified as "an exercise in national sovereignty" and as an effort to "help correct the imbalance in the flow" of information between the developed and developing countries. These phrases are popular refrains of the campaign at UNESCO for a NWICO and are familiar to anyone who has had even minimal exposure to the UNESCO press debate. The state-controlled news agency in a Western Hemisphere nation, which claims as its standard of journalistic practice the 1978 UNESCO mass media declaration, provides a compelling example of how that document may be used to suppress the reporting of facts in favor of the propagation of a supra-factual "revolutionary truth." These are only a few pieces in an alarming body of evidence indicating that UNESCO has directly influenced anti-free press policies and legislation. I believe, sadly, that the repercussions of UNESCO's drive for a NWICO will be felt in the world for a long time to come.

Another theater of UNESCO operations against Western ideals has been the debate about human rights and the rights of peoples. UNESCO champions the rights of peoples. Examples of these are

the "rights of solidarity," "the right to communicate" and even the right to resist information colonization."

The problem with these rights is that they are apparently possessed by the state as the supposed embodiment of the will of the people. So, instead of having governments compelled to guarantee their citizens certain immunities from state power, which are human rights as we know them, governments would be granted certain rights which might take precedence over the rights of those who, unfortunately, could not claim to be representing the people in general. Individuals who represent particular interests without presuming to represent the interests of the people as a whole -- individuals, journalists, labor leaders, entrepreneurs, or poets -- might be denied the right to free expression, if this were thought to conflict with the right of the people to solidarity or to cultural identity.

At any rate, the unfortunate fact is that a great many national governments today cannot demonstrate that they have gained power as the result of the will of their people, and thus do not, in any meaningful way, represent them. Hence, although we all respect the right to self-determination and national sovereignty, I am inclined to believe that the nebulous "rights of peoples" have about as much validity now as the "divine right of kings."

A second major problem in the management area is the inadequacy of program performance information furnished to governments, who are of course charged with oversight of the programs. During each regular two-year program cycle, both the Executive Board and General Conference are inundated with material which reflects favorably upon whatever UNESCO undertaking is discussed therein. Rarely, however, is information given about programs which are not fulfilling their objectives; or programs which are inefficiently executed; or which are politically motivated; or which are just silly, or hot air. Cost effectiveness analysis at UNESCO means creative writing; it means analysis of those programs which justify their costs, and system-wide reticence with regard to those that don't. The results of this crucial management deficiency, are: 1) wide-spread inefficiency in program execution and 2) manipulation by the Secretariat of member states, which are thereby incapable of discharging their constitutional responsibilities.

A third serious problem has been UNESCO's unwillingness to exercise budgetary restraint. This Administration decided in 1981 that, given economic realities then prevailing in the world, and given the determined efforts of nations throughout the world to curb government spending, it would be advisable

for UN system organizations to restrict themselves to zero net program growth in their budgets. Other countries came to similar conclusions. We do not think that this was an unreasonable position. That it was not unreasonable is demonstrated, I think, by the fact that every other UN family organization has come much closer than UNESCO to meeting the challenge of zero net program growth, and some even had program decreases. UNESCO, by contrast, approved a 1984-85 budget at its November General Conference calling for 3.5 per cent real program growth -- this figure according to the Secretariat's own calculation. We ourselves calculate a figure of 5.5 per cent real growth. This was down from an original proposed increase of 9.7 per cent. That reduction was interpreted by some as representing a major concession by the UNESCO Secretariat. We thought that the budget increase still was disproportionately high, and, as you know we voted against it. Ten other countries expressed their non-support by abstaining. These 11 countries pay almost half UNESCO's budget.

These problems, then -- the entry into highly contentious areas of endeavor such as disarmament, the drive for a NWICO, the lack of necessary management information, the straining of organizational resources, irresponsible budgetary growth -- are representative of what has gone wrong at UNESCO. Yet, the question remains, "why don't we dig in our heels and work for reform from within the organization?" We have chosen not to, because we concluded that efforts to achieve significant reform were foredoomed by the institutional functioning of UNESCO.

The governing bodies of UNESCO no longer function as they were designed to. A redistribution of power has taken place among the governing organs of UNESCO. Power has been diverted from its representative bodies (the General Conference and the Executive Board) to its administrative arm (the Secretariat).

The General Conference is, in theory, the supreme legislative and policy body of UNESCO. Under the constitution, it is supposed to "determine the policies and main lines of work" of the organization. It does not do so. It is not able to do so. It has become hopelessly dependent upon a Secretariat which sets its agenda, controls its pace, drafts its resolutions and in other ways arrogates unto itself responsibilities which should be discharged by the General Conference. The General Conference has become an institution which ratifies policy, rather than formulating it.

The Executive Board is charged with the responsibility for examining the program and budget of the organization, submitting it to the General Conference and overseeing the execution of the program. Smaller than the General

Conference, the Executive Board (51 members) was meant to be a precision instrument for the detailed review of program and budget formulation and execution; of senior personnel appointments; and of a variety of other matters. But the Executive Board, like the General Conference, has lapsed into a condition of excessive dependence upon the Secretariat. Normally, the Board does not directly question senior policy-making personnel. Too often it complacently accepts the program and budget documentation provided by the Secretariat without demanding the further information necessary to effective oversight. Requests for specific information not contained in the documentation can be ignored, unless endorsed by many members; there is thus often a sort of straw-vote on whether a given request for information is even proper for the asking. Replies to these requests are given in prepared statements which are not subject to further inquiry. There is none of the informal give-and-take over budgetary and other matters customary in parliamentary systems. Above all, the pressures of time and a full agenda serve to stifle any initiative intended to break this pattern of complacency.

We are not interested in assessing blame for the decline of UNESCO's representative bodies. Whether they have declined as the result of abdication on the part of UNESCO member states, or as the result of a usurpation on the part of the Secretariat is not of paramount importance. What is important is that they are not now, in their current advanced state of docility, plausible engines of reform; reform which is so urgently needed at UNESCO. We see little point in pursuing a course dependent on such weakened, and dulled, tools.

Now, Mr. Chairman, let me turn to the three points you asked, in your letter of invitation to me, that I address specifically. The first concerns the courses of action being pursued by the United States Government and by other member nations to improve programs and program management at UNESCO. I have interpreted this question in the broadest possible manner to include not only efforts directed at the Secretariat's preparation of programs and budget (and their method of review by UNESCO's organs) but also efforts directed at reform of the Secretariat itself in its structure, personnel administration, allocation of funds, and execution of the program.

During the past decade, the U.S. has been in the forefront of efforts to improve UNESCO's budgetary, program, and management practices. It has done so both by introducing initiatives and by encouraging its western colleagues to propose reforms of their own. Let me illustrate.

In 1979 the United States volunteered to undertake for the Executive Board a study which eventually bore the name The Relation of Planning, Programing, Budgeting, and Evaluation to the Implementation of the Program of the Organization. It was prepared by Dr. Stuart Portner, former Assistant Secretary for Management of the Organization of American States. The Portner study noted that UNESCO utilized processes of planning, programming, budgeting, and evaluation, but said that the time had come for refinement of these processes to make them more meaningful tools of management for the governing bodies and the Secretariat. To this end, it offered some 15 specific, technical recommendations to improve UNESCO's programmatic and budget practices. As far as we can ascertain, the report was filed and its recommendations largely ignored.

In 1980 in Belgrade, at the 21st UNESCO General Conference session, New Zealand, after extensive consultations with the U.S. and other western nations, introduced a major resolution requesting the UNESCO Executive Board inter alia "to evaluate the budgeting techniques of the Organization for the efficient implementation of the second medium-term plan of UNESCO." This resolution met with the following strong riposte from the Director-General in his closing speech: "I am struck by the way in which this resolution puts together budgeting, management and program techniques, on the one hand, and the constitutional responsibilities of the governing bodies and the Director-General, on the other hand...I should like to point out that, while the governing bodies are responsible for taking decisions concerning the program and budget, it is the constitutional responsibility of the Director General to manage the resources made available to the Organization to carry out the program and to report thereon to the governing bodies."

At the Extraordinary Session of the General Conference in 1982, the United Kingdom, again after consultation with the United States and other western countries introduced a major resolution on evaluation, outlining in considerable detail measures which the Organization might pursue to improve its program efficiency. After considerable discussion, the resolution was noted and for all practical purposes shelved. During the same meeting, the United States cosponsored with western countries three other resolutions concerning the methods of work of the General Conference and the preparation of the future form of the program and budget of the Organization. The Director General's comments on them are replete with objections. Although the resolutions eventually passed, most of them were stripped of their innovative provisions.

In 1983, at the 22nd UNESCO General Conference session, the United States submitted a resolution inviting the Director General to seek the assistance of the United Nations Joint Inspection Unit to examine UNESCO's budgetary techniques and to report its recommendations on the applicability of these techniques for consideration by the 23rd General Conference session. It was soundly defeated.

In addition to these attempts at program, budgetary, and management reform, our Permanent Delegation has over the past two years made a number of important policy statements bearing on improvements in UNESCO. For example, I laid out in length critiques at the Executive Board sessions of September 1982 and June 1983, the U.S. position on each major UNESCO program for 1984-85 and on significant management and budgetary issues. Particular attention and criticism were directed at communications, human rights, and budget issues as well as at questionable policy proposals related to reflection on world problems, disarmament, philosophies of development, and management. The language was forthright. I stated that I did not believe that support for UNESCO would be forthcoming without significantly greater budgetary restraint. I noted that most of the proposals for UNESCO's major program of strategies for development were prime candidates for budget pruning. I warned that the program on peace and human rights would move the Organization in increasingly contentious directions far beyond UNESCO's competence. These remarks were supplemented at the 22nd General Conference session by a score of presentations in the working commissions and through the submission of a dozen draft resolutions expressing U.S. opposition to specific program actions and to the budget as a whole. Indeed, the United States was the only country to vote against the overall budget.

Let me turn now to a second question posed in the letter of invitation from Congressman Scheuer: the status of the U.S. Government's evaluation of the conditions necessary for its continued participation in UNESCO.

As you know, Mr. Chairman, the United States has announced its firm intent to withdraw from UNESCO at the end of 1984 and therefore has not elaborated a list of conditions which would cause us to remain. The fact of the Administration's decision is evidence that it did not judge a turn-around in UNESCO a likely possibility in the short term. Nonetheless, we will be attentive to significant structural and programmatic changes over the coming months, and indeed are encouraging such change.

Although we have no laundry list of conditions for reconsideration of our withdrawal decision, UNESCO can be in no

doubt as to our complaints about the Organization. There are a number of possible remedies for those complaints. Some should be obvious, such as the adoption of a budget of zero net program growth. Others may be less obvious to the outside observer, but would include things like reduction of program support for disarmament and the New World Information and Communication Order, endorsement of the primacy of individual human rights vis-a-vis so-called "collective" rights, rule changes to permit increased use of secret votes, and transparency in the budget presentation..

The third specific area that the Chairman has requested I address in my testimony is the "need for a comprehensive review or audit of alleged mismanagement of UNESCO personnel, program administration, budgeting and finance." I have already outlined the Administration view that there are considerable problems in this area, and more detail can be found in the U.S./UNESCO Policy Review we have issued. Whether or not further review in this area is required is a judgment which I believe must be left to the Congress.

I note in this regard that Congressmen Fascell, Yatron, and Mica, in a letter to Secretary Shultz of February 29, 1984, indicate the GAO has been requested to "begin immediately a review of U.S. participation in UNESCO with special reference to budget and management issues." I am also aware that a related GAO review initiated within the past year remains underway. We, of course, stand ready to lend our customary cooperation to these and any further efforts the Congress may desire to undertake.

Thank you.

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Mr. SCHEUER. Well, thank you very much, Madam Ambassador, for that eloquent statement delivered so articulately. I'm sure we're all impressed.

Now to the hurly-burly part of the process. You undoubtedly know that last week, five Members of Congress called for a GAO investigation of Unesco on these allegations of corruption, mismanagement, debasing of the U.N. civil service process, and the like. We did this following the exchange of letters between Mr. M'Bow and myself in which he agreed, and I assume in full good faith, to open up the books and records and files of the agency, and to provide full access to the investigators if they came to his personnel at all levels. The Members who signed this were Congressman Fascell, chairman of the Foreign Affairs Committee; Congressman Don Fuqua, chairman of the great Science and Technology Committee; myself; Congressman Dan Mica, and Congressman Gus Yatron, also chairing subcommittees that are concerned with the jurisdiction over matters deeply involved with Unesco.

Now, can you tell us, in your view, if this investigation is carried out with diligence and with competence and with an unerring instinct for the facts, wherever they may be, for rooting out the facts, what contribution could this make to two phenomena? First, to the formulation of our final decision at the end of 1984 as to whether to pull out or perhaps to defer that decision, as we could do—this is a decision that the administration will have to finalize; they've taken the first step. Apparently this is a two-stage rocket; they made the decision to pull out, they gave notice at the end of 1983, and they've exhibited a commendable, in my view, degree of open-mindedness by setting up a commission to scrutinize and evaluate and measure the progress that is being made by Unesco. So they are going to have a second look and a sober evaluation based on whatever happens. How could this survey affect that, provide some input for that, and how could it affect the decisions and the thinking of many of the Western countries who have looked by, with the same feeling of frustration and dismay that you have exhibited, in their decision as to how to react to the American withdrawal?

Ms. GERARD. That's very interesting. It's a good question.

As far as its input into the 1984 December decision, I think the review is an encouraging step. I think it can be helpful. Of course we have to see, No. 1, whether we get the full cooperation of the Unesco Secretariat; that's extremely important. The Director General has assured full access to the personnel and to the records and documents. I trust that that will be the case.

Mr. SCHEUER. Let me just interrupt you for a brief moment to say that I have full confidence that the Director General—who met with me for several hours on two successive days and gave us his letter committing full access, both to records and to personnel, with total bona fides—I expect him to follow through in good faith. I have no doubt about that, and I'm sure that he is a man of honor; and if he hadn't intended to do it, he wouldn't have given us the letter.

Ms. GERARD. He wouldn't have agreed.

Mr. SCHEUER. I beg your pardon?

Ms. GERARD. Yes, he wouldn't have agreed.

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Mr. SCHEUER. He wouldn't have agreed, and I am totally relying on his good faith.

Ms. GERARD. But I am just saying that step one, obviously, is cooperation.

Mr. SCHEUER. Yes.

Ms. GERARD. Step two, if they find any areas where they feel recommendations are in order, then it's a question whether the Organization will accept those recommendations and whether they will implement them. And so, I say, it's an encouraging step but, again, it's just the beginning.

On the other hand, of course, our concern in the discussion of mismanagement of Unesco is not just in the financial techniques, the lack of accountability, the sort of appearances versus reality, but also in the excessive politicization of the program where more and more into the old areas of Unesco they are putting confrontational programs. They are putting duplicative programs. And so this would address a concern, but there are many concerns. Nonetheless, I think it's a very useful step in the process and I think other member countries will be pleased. They will be watching to see the results of that review. And certainly, you know, many other countries' governments ask for management consultants to come in and tell them what recommendations they might have and I think this is a thoroughly appropriate thing to do. We have done similar things with the ILO, for example, and given them recommendations; they adopted 90 percent of them, and they liked it so much that they asked us to come back the next year and make another review. So I think it's constructive criticism, and it's a good thing.

As far as influencing decisions, I think we have to wait to see what the results are.

Mr. SCHEUER. Well said.

Congressman McGrath.

Mr. MCGRATH. Thank you, Mr. Chairman.

Madam Ambassador, I was a delegate to the International Parliamentary Union in Seoul, Korea this past October and I couldn't help from gleaning, sitting at those meetings, from time to time that it was sort of us against the rest of the world. We had very few friends in that international forum and we were constantly being criticized, along with other democracies in the world, by Third World nations, Communist bloc nations, and whatever. I'm just wondering whether or not that same kind of atmosphere exists in Unesco, as I know it does in the United Nations?

Ms. GERARD. It certainly does. Not only in Unesco in the deliberative bodies, but the documentation of Unesco is replete with abusive criticisms of free world values, and it's one-sided criticism. They're not criticizing Marxism, they're not criticizing collectivism; they're pushing collectivism. They're pushing that the media must be an instrument of the state. They're pushing wanting to get into content of messages, and I think it's about time we said, "Enough of that."

Mr. MCGRATH. Let me throw you another softball. Does Unesco have any value to us at all?

Ms. GERARD. Certainly. Unesco has done, and is continuing to do, some very useful things. Their programs, for example, in illiteracy

are very useful. Adult education. The cultural heritage programs—although even there, I feel they've become too diffuse. They now have 26 international appeals going for preservation of cultural monuments. That means that if you're to have any followthrough, you could have 2 weeks for each one during the year. I think they should, again, set priorities and targets, maybe do 5 a year or 6; but with 26, you raise expectations and then you don't deliver.

Mr. McGRATH. Are we the only member country of Unesco that has given notice of intent to pull out?

Ms. GERARD. Yes, we are the only one who has given notice. There have been press reports that Great Britain, in reviewing its participation—I've seen the House of Lords debate on that subject, which was extremely interesting—and I think it would depend on their review, what they are going to do. Of course, it's up to each member state.

Mr. McGRATH. Let me ask you a question about Mr. M'Bow. How long has he been Director General?

Ms. GERARD. He's been Director General for 10 years. He was elected first in 1974, and reelected unanimously in 1980. He will serve until 1987.

Mr. McGRATH. That's all.

Mr. SCHEUER. Congressman Mike Andrews.

Mr. ANDREWS. Thank you, Mr. Chairman.

We may reach a point where there may be good programs, like the science program, but where it ceases to be a realistic, pragmatic, cost-effective investment of our dollars. In your mind, Madam Ambassador, when do you reach the point where you would say we should no longer belong, in spite of the fact that there may be some good programs?

Ms. GERARD. Well, as you know, I think we have reached that point. I think because we take seriously the business of Unesco doing what it has been constitutionally mandated to do, in help and cooperation in education, science, communications, that we might try to the best of our ability to see to it that for every dollar that we put in, that it is used as efficiently and effectively as possible. This is just as we see to it that in other organizations, such as OAS and UNDP, our money is well spent. It's our duty.

Mr. ANDREWS. Let me ask you specifically about education. Can the program survive without our participation?

Ms. GERARD. Without our participation? Of course, in the illiteracy program, for example, which I think is one of the most important, along with adult education, we can continue through bilateral aid. OECD has an educational sector. I think many of the other organizations do have or could have expanded sectors of education. I think also we get a great deal of leverage through USIA fellowships. And this, I think, again, is an important exchange, in helping people in the formulation of their careers as doctors, et cetera. It's a cultural exchange as well.

Mr. ANDREWS. Thank you, Madam Ambassador, and thank you, Mr. Chairman.

Mr. SCHEUER. Congressman Tom Lewis.

Mr. LEWIS. Madam Ambassador, how visible to the outside has the deterioration of the U.S. position of influence become?

Ms. GERARD. Well, of course, I can speak mainly from my 3 years there; but in looking back over the records and the newspaper reports and such, there has been criticism for a long time. The problem has been there, and it's been growing. I think the attitude, unfortunately, seems to have been somewhat in the past that—well, it's true that some of them like to blow off steam. But it seems to me that if you're going to be partners, you'd better cooperate. It doesn't help us to throw mud at each other, and the mud throwing is one way.

Mr. LEWIS. And there are problems also with the insiders, the people working at Unesco?

Ms. GERARD. Yes. There is a great deal of intellectual concern with the deterioration of Unesco, with its becoming less and less effective, less and less diligent, and not doing its basic job, not helping to develop the world the way it really is mandated to do. Also, I think there is very low morale in the Secretariat. A recent staff poll showed only 2.5 percent of the staff believe that promotions are based on professional efficiency.

Mr. LEWIS. What is the problem with strategy and draft resolutions?

Ms. GERARD. One of the problems here is the fact that most of the resolutions are actually written by the Secretariat. Those that are written by member states are submitted with a typed note from the representative—which originally—when we started making these notations, only discussed the international implications of the issue, but now goes much further into the substantive question of whether this is acceptable, whether it isn't acceptable. And it is extremely difficult to get any substantive recommendation adopted because of that.

Mr. LEWIS. Do you find that other Western bloc nations tend to appease and accommodate the Soviet Union?

Ms. GERARD. I think that's a little strong, that way of putting it. I think that you could say that they have an approach, at least since I arrived at Unesco, of damage limitation; and from my point of view, damage limitation is slowly sliding down the hill.

Mr. LEWIS. One final question, Mr. Chairman.

Do you feel that the State Department has provided you with adequate assistance over the years when you have faced difficult and controversial resolutions, when you have not had the strong vocal support that other Western bloc countries have had?

Ms. GERARD. I think the State Department has tried its very best to give us that kind of support. I've been surprised at the amount of support, for example, that I've needed on the disarmament issue. I spent 2 weeks negotiating disarmament resolutions at this last general conference, and I would have loved to have had, at that point, someone from the Arms Control and Disarmament Agency; and that, of course, is a ridiculous spending of your time and resources away from the proper programs of the Organization. Again, some of our allies are speaking up more. Referring to your previous question, I don't think they're speaking up as much as I'd like to see, but we're getting there.

Mr. LEWIS. What do you think can be done so that the Western bloc nations are not always responding to the actions of the Eastern bloc nations?

Ms. GERARD. I think what we have to do is what we've been doing more and more of—introducing our own resolutions, and a variety of them, so that we're talking about our piece of paper, not theirs; or at least you're talking about both, not just trying to change a word or two. I think we should be—obviously, we're proud of our values and we should be speaking out about them—pushing programs which will help, for example, promote an independent press. And also speaking out on the issues, and perhaps cutting out some of the things that—for example, one of the education programs for over $1 million, saying to put that into a literacy program where it can work.

Mr. LEWIS. Thank you, Madam Ambassador.

Thank you, Mr. Chairman.

Mr. SCHEUER. Congressman Harry Reid.

Mr. REID. As I understood your testimony, you stated that the administration would consider further participation if certain conditions changed; is that right?

Ms. GERARD. That is correct.

Mr. REID. Why would there have been—as I understand it, our contribution is some $50 million a year or thereabouts?

Ms. GERARD. Approximately.

Mr. REID. Wouldn't it be better to say we are going to cut our funding by 50 percent?

Ms. GERARD. Well, I think that is a question for the administration. We have a legal obligation to pay our assessments so long as we are a voting member. We have already cut out a percentage of the program that goes to helping the PLO. That is a congressionally mandated cut. But otherwise, we felt that since, in our analysis, that there was more bad than good, it was too costly, basically, to continue funding programs where the moneys were not being properly spent, and it also made us, really, an accomplice to pushing these collectivist theories, et cetera, if we stayed.

Mr. REID. One of the things that I think sometimes we, as a nation, fail to do is look out for our national interests. Now, it seems to me that when we depend so much in various areas on programs that this Organization provides for us—for example, the Navy currently receives, I understand, some 60 percent of their oceanographic data from the International Oceanographic Commission, which is a component of Unesco. Where are we going to go to get this information?

Ms. GERARD. Well, it happens that the Intergovernmental Oceanographic Commission is one which we can continue to be a member of, and so in that particular instance there won't be a problem.

Mr. REID. So our withdrawing does not affect that program?

Ms. GERARD. No. We can make voluntary contributions and, in fact, increase our participation.

Mr. REID. Has anyone to your knowledge talked to the Office of Management and Budget as to whether or not this $50 million that we now contribute to Unesco would be made available for similar programs that the Congress would come up with or the administration would recommend that would cover these areas of education, science, and cultural endeavors and concerns?

Ms. GERARD. We are certainly urging that they do so, but naturally it is the prerogative of Congress to specify whether those

funds will be maintained. I certainly would hope to see it so and we've said that we intend to request it. I think certainly there are many important things, such as saving Mohenjo Daru and many of the other programs, that it would be important for us to continue and try to find more effective ways—more helpful ways—in which to spend the money in those areas.

Mr. REID. Thank you, Mr. Chairman.

Mr. SCHEUER. Madam Ambassador, the investigation that the five Members of Congress have initiated with the GAO was initiated because of the widespread rumors of rampant corruption, mismanagement, fiscal irregularities on a very large scale, and total corruption of the Civil Service System of merit appointments. Let's assume for the purpose of the argument that the evidence accrues that these allegations are substantially justified and that this condition does exist. Do you think that if the GAO report documents this condition, that the Third World consensus, which really has enabled the Director General to rule with very little accountability, will remain? Will this consensus remain intact, both as to the rampant wrongdoing, if that is proven—the systematic wrongdoings and the corruption of the process—and will this Third World consensus which has permitted these aberrational programs—these viciously anti-Western, antifreedom, anti-Western values, going to the heart of our Western value structure, going to the heart of what a democracy is all about—will that consensus continue to support these viciously destructive aberrational programs that have run far from Unesco's original mission?

Ms. GERARD. Of course, I cannot prejudge what the GAO will find. I would think——

Mr. SCHEUER. I made that basic assumption.

Ms. GERARD. Yes. I just wanted to stress that I have seen, personally, evidence of what you might nicely call fiscal laxity. I would hope that those things would come out, if there are such, and that they would be corrected. I cannot speak for what other member nations would decide, but I would think that most member nations would like Unesco to be as effective as possible if the reforms are basically possible under the current Director General, but it's up to them to decide who they want. And he doesn't come up for reelection until 1987.

Mr. SCHEUER. I guess what I'm asking is if—and this is a big if—if the GAO report identifies systematic and widespread irregularities and patterns of corruption that we've repeated several times today, if that is well documented, do you think that the consensus in the Third World that has really permitted one-man rule at Unesco without the normal checks and balances that the other U.N. agencies have, will that one-man rule and will those continuing abuses, and will the programmatic abuses that we've heard—the anti-Western diatribes, the anti-free press orientation, the whole thrust that goes against our Western value system—will the consensus that has supported those programs continue to prevail, or is it conceivable that the GAO report, if these allegations of wrongdoing are identified and documented, could in effect shake the cage of the entire system to the point where the Third World themselves will take to join with the Western nations in producing thorough reform? Not only a process, but a program as well?

Ms. GERARD. I think it certainly could from the point of view that they want the organization to be effective for them, too. And when you think of cooperation, it's not just helping the developing world; that helps the developed world, too, although I would say that we're all developing. And so I would think that it is completely possible. Many of them that I have spoken with from all different countries have said they would like to see the programs be more practical. They'd like to see more decentralization, including decentralization of authority. There is very little delegation of authority, and I think all of these things could make it a much better organization.

Mr. SCHEUER. Do you think that this process we're initiating could lead either to decentralization of authority at Unesco, or perhaps a change in the top authority that would provide a more congenial atmosphere, a more fertile terrain for basic reform?

Ms. GERARD. I think it certainly is possible, and I would hope that would be the case.

Mr. SCHEUER. Congressman Tom Lewis?

Mr. LEWIS. Mr. Chairman, I have no further questions.

I would just like to state, Madam Ambassador, that I thought that that was the most straightforward testimony that I've had the opportunity of listening to since I've been in Congress, only 15 months.

Ms. GERARD. Thank you.

Mr. LEWIS. Thank you.

Mr. SCHEUER. Congressman Mike Andrews?

Mr. ANDREWS. No questions.

Mr. SCHEUER. Well, Madam Ambassador, you've given us a very refreshing and very forthright statement of your views. You have given us a great deal to think about as we commence this investigation, and we thank you very, very much.

We will hold the record open for 10 days to 2 weeks for members to submit additional questions in writing if they so wish, and if you wish to provide us with any further thoughts or to elaborate your remarks in any way, we'd be happy to have you do that.

Thank you very, very much for traveling the ocean and giving to us of your views and your wisdom.

Ms. GERARD. Thank you, Mr. Chairman, and I'd be very happy, as I said, to cooperate as fully as I know how, and my office staff, too, with what you're doing.

Mr. SCHEUER. Thank you very much.

This meeting is adjourned.

[Whereupon, at 2:30 p.m., the subcommittee recessed, to reconvene at the call of the Chair.]

IMPACT ON U.S. SCIENTIFIC RESEARCH OF PROPOSAL TO WITHDRAW FROM UNESCO

THURSDAY, MARCH 15, 1984

HOUSE OF REPRESENTATIVES, COMMITTEE ON SCIENCE AND TECHNOLOGY, SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY AND SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT,
Washington, DC.

The subcommittees met, pursuant to call, at 3:10 p.m., in room 2318, Rayburn House Office Building, Hon. Doug Walgren (chairman of the Subcommittee on Science, Research and Technology) presiding.

Mr. WALGREN. Let me call us to order and open this joint hearing with the subcommittee chaired by our distinguished colleague, Jim Scheuer. As some of you may know who follow the major national news, Mr. Scheuer has had a longstanding interest in Unesco, and has recently taken some extremely important initiatives to review the broader aspects of the U.S. participation in that organization, and the interest of his subcommittee and his personal interest have put in motion some directions, particularly an audit by the GAO, a very close examination of Unesco that we are all hopeful will clarify very substantially where we are with respect to that organization.

Today, however, we are focusing on a somewhat narrower issue: The impact on the United States of our potential American withdrawal with respect to science as a focus.

The United Nations Educational, Scientific and Cultural Organization was created as a specialized U.N. agency in 1946. It was founded "for the purpose of advancing through the educational, scientific, and cultural relations of the people of the world the objective of international peace and the common welfare of mankind."

Unesco was dedicated to the idea that calamities such as war could be avoided through greater international understanding and cooperation. "Since wars begin in the minds of men," its constitution begins, "it is in the minds of men that the defenses of peace must be constructed."

The proposal to withdraw the United States from Unesco would be effective on December 31, 1984. However, the President did say, in announcing that action, that he would reconsider the proposal if Unesco made clear progress in rectifying certain problems affecting the agency.

There is no question that Unesco has some serious problems from the U.S. point of view. However, the purpose of this hearing,

again I want to emphasize, is not to question or review necessarily the decision to withdraw, but to explore the effects of that withdrawal on the U.S. scientific and technical community, a subject which is particularly in the jurisdiction and interest, and indeed, the responsibility of the Subcommittee on Science, Research and Technology and the responsibility of the overall Science and Technology Committee, including that subcommittee chaired by Mr. Scheuer.

Specific questions that must be explored today are: What provisions can the United States make to maintain important international science programs between now and the time we pull out of Unesco; what is it going to cost for this transition now and in the long term; what mechanisms will be used to fund, guide, and direct these programs if we no longer maintain our membership in Unesco; and if we do withdraw, who, then, will set priorities for science and technology programs in the international community that are presently within Unesco?

The most general question that must be asked of the scientific community is, is the U.S. participation in Unesco worth saving? What contribution does it make to our national interests and to the interests of mankind?

With that, I would like to recognize the joint Chair for these hearings, the Congressman from New York, Chairman Scheuer.

Mr. SCHEUER. Thank you very much, Mr. Chairman.

I think you have covered the landscape in your introductory remarks very well, so I would simply like unanimous consent to put a brief statement in the record.

Mr. WALGREN. Thank you. Without objection, that is the order and are there other members who would like to make opening comments or reserve any statements?

[The opening statement of Mr. Scheuer follows:]

OPENING STATEMENT OF HON. JAMES H. SCHEUER

Thank you, Mr. Chairman. This hearing is the second conducted by the Science and Technology Committee on the subject of U.S. participation in UNESCO.

Our objective in holding these hearings is to establish an ongoing discussion throughout the remainder of 1984 so that the Congress may have the information necessary to evaluate the Administration's decision. Last week, the Subcommittee on Natural Resources, Agriculture Research and Environment was privileged to hear testimony from the U.S. Ambassador to UNESCO, Jean Gerard.

From her unique perspective, Ambassador Gerard presented an on-site appraisal of UNESCO programs and management, highlighting those organization's policies which in her view are incompatible with U.S. interests, and contrary to the goal of promoting cultural, scientific and educational cooperation between developed and less-developed nations. Of particular concern to our subcommittees are the implications that a U.S. withdrawal from UNESCO will have on international scientific cooperation and on U.S. scientific research.

We are pleased, therefore, to have a distinguished group of scientists here today to give their views on the value of UNESCO's science programs and the likely consequences on international science of our withdrawal from this organization. In September of 1983, the National Science Foundation, at the request of the Department of State, organized a working group to review UNESCO's science programs. The views of the participating agencies were incorporated into the NSF report, with the overall recommendation that the U.S. should continue its membership in UNESCO.

Notwithstanding these recommendations from the scientific community, if the withdrawal decision remains final, we must begin to explore options for continued American support of international cooperation outside of UNESCO. The Administration and the scientific community will need to work closely in attempting to reestablish a global scientific network for the U.S. Such efforts might include initiating

new bi-lateral and multi-lateral agreements, channeling funds into existing international organizations and into other UN organizations distinct from UNESCO.

We will also need to decide how these new programs will be managed and how funding shall be allocated. I look forward to the testimonies and discussion here this afternoon in hope that we may begin to resolve some of these issues.

Mr. WALGREN. Well, with that, we have today three—I am sorry—Mr. Brown.

Mr. BROWN. No, Mr. Chairman.

Mr. WALGREN. We have today three witnesses to give us some specific perspective on these issues. The subcommittee is going to maintain its interest in this subject beyond this hearing and, in particular, explorations with the appropriate parties in the U.S. State Department, but today, we have Prof. Paul Baker, who is the head of Department of Anthropology at Penn State University. Professor Baker is the chairman of the U.S. National Committee for the Man and the Biosphere Program, and has a number of other involvements on the international level and has been the chairman of the National Research Council's Subcommittee on Unesco Science Programs, in addition to serving as a consultant to Unesco in an earlier period.

I would like to ask Dr. Baker to come forward at this point and we will proceed sequentially through the witness list. We are very glad you could come, Dr. Baker. Welcome to the committee and we appreciate your being a resource to the Congress very much.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. WALGREN. And let me say at the outset that your written statements and those of other witnesses will be made part of the record automatically, almost mechanically, and you can feel free to communicate to the committee as you feel is most effective in underscoring the points that you would really like to make.

STATEMENT OF PROF. PAUL T. BAKER, HEAD, DEPARTMENT OF ANTHROPOLOGY, PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PA, CHAIRMAN, U.S. NATIONAL COMMITTEE FOR THE MAN AND THE BIOSPHERE PROGRAM, JANUARY 1982-PRESENT, VICE PRESIDENT, INTERNATIONAL COUNCIL FOR MAN AND THE BIOSPHERE PROGRAM, CHAIRMAN, NATIONAL RESEARCH COUNCIL'S SUBCOMMITTEE ON UNESCO SCIENCE PROGRAMS, JANUARY 1982-APRIL 1983, CONSULTANT TO UNESCO, 1972-82

Mr. BAKER. Thank you.

I am very pleased to be able to testify on this subject. At the same time, I am very humbled by the fact that I really don't feel that I, or perhaps the three witnesses, or many more of us, can possibly accomplish the task of assessing what the impact will be.

I felt that I might help the committees in their deliberations in two ways: First, by covering, to the best of my ability, an overview of what the impact might be of our withdrawal on U.S. science, but then perhaps of more benefit, to look at one program in depth where I can speak with a great deal more information than I can on the whole subject.

On the overall impact, I think it is important to start with understanding in perspective what Unesco is and what we can expect of it in relation to science. It is a unit that two-thirds of its budget

is devoted to the sciences and humanities; thus in many regards, it is similar to a large university and serves many of the functions of a large university.

At the same time, it must be seen in financial perspective. With its $200-million-a-year budget, it has a budget less than half as big as my university, which is certainly not the largest university in this country. So one must understand that the possible accomplishments with this are not to be expected to be much—as great as even a major American university.

As a matter of fact, I can see a tremendous number of analogies between Unesco's science problems and funding problems and the university's problems, but perhaps it is not too beneficial to go on with this analogy. I will simply end it with one minor point. My university is funded only one-quarter by the State— very much as we fund one-quarter of Unesco—and one asks, therefore, what would happen to the university if the State stopped funding?

Obviously, we would not stop providing some science benefits to the State of Pennsylvania, but just as obviously, also, they would—the benefits would go down to the State and to the Nation as well.

To be more specific, in the past fall when the State Department began its 14th review of our participation in Unesco, a number of—I was asked by the Unesco Commission, which I am Commissioner, to give a point of view on the subject and I wrote a document which I have appended in the written testimony. I don't find that my opinions have changed too dramatically since then, but I think there are four points that should be emphasized that I emphasized then and I would like to do so again.

First is the fact that we are unable, I think, to assess really the impact of Unesco withdrawal on U.S. science. Straightforwardly, the information does not exist. I say this, of course, there are—other people have sources of information that I do not have available, but having attempted on behalf of the National Research Council to overlook this question for a couple of years, and again attempting to look at the question in relation to the Unesco Commission, I find that there is no way we can assess that impact.

We can name the kinds of international organizations or international scientific activities that Unesco is involved in and whether or not we are involved, but we don't know the number of people that are involved. We don't know the kind of money flow that comes back to this country, to American science, from Unesco.

The reasons for that is because the money is not channeled simply through those programs. There is a lot of direct contact and there is no register of who is involved and so forth. So I think basically it was not an answerable question last fall, and I rather doubt that at this moment, it is an answerable question still.

The second point I would like to emphasize is that what assessment was possible last fall, it seems to me, suggested that there were—there were inevitable damages that would occur to American science from our withdrawal and that no substitute mechanisms were apparent at that time which could be adequately compensated—compensate for all these losses.

Now, at this point, I ought to add another piece of information that I am basing this not only on what I had seen, but I also, during the fall, was able to see the early draft provided by the com-

mittee organized by the National Science Foundation to respond to what the impact might be. I also read the statements made by the many scientific organization representatives to Unesco Commission. So I had at least three sources of information.

All of these said that—that there were inevitable costs and I was particularly impressed, as a member of an informal committee assembled at the Academy, with the fact that when we looked at the potential organizations that could take over the Unesco science functions, we thought this was impossible.

Let me be specific on why it is not possible. The most obvious example that one might think of is that the International Unions of Science or the International Council for Scientific Unions might be able to take it over, but we find that these organizations have extremely small secretariats of three to four people. They operate on budgets of $2 to $3 million. One can well imagine that if the United States attempted to bolster them too massively, it would not be very successful. In other words, the other countries that participate might feel that the United States was trying to totally dominate if they said, "Now let us put in $10 million into this to cover some of these problems."

There is the fact, also, that the other international organizations, such as ICSU, have representatives from less than half as many countries as does Unesco. So these are the kinds of problems in trying to find adequate substitutes.

Those reports that we made last fall also suggested that the deficiencies of Unesco science programs, which we were—could uncover did not necessarily come from any political aspects, but were rather related primarily to the administrative policies of Unesco and second, to the fact that some of the Unesco staff were not very well trained in science.

The last point I would like to emphasize is that the lack of U.S. funds to support U.S. scientific participation in Unesco-related science and technical activities, which has become increasingly severe in the last decade, certainly has had the impact of limiting our ability to draw benefit from Unesco and to affect the directions of Unesco science policy.

Now, having said that, I have just had the opportunity to read the February 27 release by the State Department of the U.S. Unesco policy review, and I carefully examined those sections that were related to the science sector. I find that many of the points that I have just made are not very fully reflected in this document.

First of all, the document gives the impression that—and it says "The assessment that has been made really allows us to know what the impact is, what the impact of withdrawal would be on U.S. science." I simply did not see the documentation that made that possible. Perhaps there were many sources that I was unaware of.

Second, I did not see anywhere in the document something that I saw in all the other input, and that was that all the scientific input suggested that Unesco was very valuable and that we would damage U.S. science by withdrawing.

Finally, the document suggests that we could continue to participate in international science and technology at near our present level without Unesco involvement. Again, unless there was input that did not come from the initial NSF Committee review, did not

come from the foreign secretary of the National Academy of Sciences, or did not come from the responses of the particular scientific body representatives to the Unesco Commission, if it didn't come from there, I don't know where it did come from, this optimism.

Having said that, let me turn to the Man and the Biosphere Program, where I feel that I can say things with a greater degree of certainty and a greater degree of knowledge. I have testified in the past year before Dr. Scheuer's committee on the Man and the Biosphere Program in the United States, and I think it would be inappropriate for me to try and review this in any detail only a year later to the same subcommittee. So I will talk mostly about the international program and secondarily some of the events that have occurred in the U.S. program since that testimony last year.

Perhaps it is enough if I will simply note that the Man and the Biosphere Program was a program created by the staff of Unesco in collaboration with scientists from around the world. It was seen as a follow-through, a more practical program to follow on what had been the International Biological Program that was then terminated, and it attempts to—to do a very broad problem-solving in the environment field, and do that problem-solving without—without trying to keep it a man-versus-environment question, but rather one, how can human beings interact with the environment, doing minimal damage and deriving maximal benefit for both.

As such, it is a unique program. There is nothing else like it in the world today. No other international organization has such a program under way anywhere. It has been one of the most successful programs as far as—as a matter of fact, I think I would go further than that and say that of the recent programs that Unesco has initiated, it has had the widest acclaim on a worldwide basis.

In the world 105 countries have committees for the Man and the Biosphere Program and it was—has been extremely highly endorsed with all the general assemblies of Unesco.

The program gradually built during the 1970's, both internationally and here in the United States, and in a sense, both the international program and the U.S. program reached their peaks of success in 1980. It was at that time that the decade review of the program was undertaken and was very well received. It is one of the few programs that Unesc0 has actually undertaken a review, a scientific review of, and this, I think, shows both their confidence that it was a good program and the desire to make this fact known.

It was also the peak in the U.S. program, at which time there was about $1.5 million in direct funds available to the U.S. program. Thereafter, a number of difficulties have developed, both in the international program and in the national one. At the international level, the problem, again—I want to emphasize for much of science, the problem in Unesco, the problems have not been political, but have been related to the administrative structure and the administrative policies of Unesco.

Thus, the budget that was concentrated on the Man and the Biosphere Program in the last 2-year budget was diffused across a great number of the sections and divisions within Unesco. In spite of increases in budget in other sections of the Unesco's program, no budget increase was given to this program.

So the combination made it a program that was really shrinking in resources. Most serious of this was this diffusion of money across sections, not allowing the central management of the program. As a matter of fact, the secretary general of the MAB program in Paris protested this strongly. The international bureau, which as vice president I served on, protested this strongly. We were supported by a number of world leaders in science in the need for consolidating this program. Mr. M'Bow promised that action would be taken to solve the problem. When it had not occured by January, the Secretary General, who was a very important individual in making this program successful, resigned.

So the problems are ones of policy—not politics but administration in Unesco.

In the United States, the causes for decline of the U.S. MAB Program are not so clear to me, frankly. For whatever reason, tightening of money or what not, the moneys available to the program shrank dramatically, so dramatically that as of the time that we testified concerning the program last April, we were not sure that it would continue.

At that time, a provision for continuing it was made in the State Department, but I must note that again by October of this year, we were faced with a very small staff and essentially no operating money.

At this point, NASA, the Department of Interior, through the Park Service and the Forest Service in Interior have provided some operating funds and we have operating funds at $300,000. Nevertheless, the national committee is on record as having noted that the program cannot continue; there is no point in continuing it unless additional resources are made available. That would mean the termination of the program as of October 1.

This attitude is reflected in our supporters. Thus, we had, in providing support from the Forest Service and the Interior, it was noted in the letter of support that unless additional funds were made available through the State Department or through congressional funds, they did not feel they could continue to support the program beyond this year.

Therefore, as of the moment, this program will terminate in the United States as of September 30.

Given these kinds of difficulties, then what can we do, or is there going to be a continuity? Again, when I examined the review done by the State Department, dated February 27, I get the impression the MAB was not an important international effort. Perhaps as chairman of the program here, I am overemphasizing it. They may be right, but certainly they do not consider it a very major one as far as the document was concerned.

I would point out that whatever happens to the U.S. program, U.S. withdrawal will undoubtedly have a serious effect on the international program. One-quarter of the high-quality staff in Paris of the Unesco program are from the United States and would undoubtedly not continue. Therefore, the program would then be not only without its really founding and supporting director general, it would have a loss of one-quarter of the high-quality staff that exists in the program.

So internationally, I don't see how the program could help but suffer, and I feel that we would suffer in the process because the questions that MAB addressed themselves to, like the welfare of the forests of the world, the welfare of the species, the development of international biosphere reserves to protect species. These are questions that are important to us, too, even though not done in this country.

In our own program, as in—about to terminate, we—I also have a document which is provided by the State Department on questions and answers in relation to U.S. Man and the Biosphere Program. The first question is, How will the withdrawal from Unesco affect the U.S. man and the biosphere program? The answer: We expect little substantive change to occur in the U.S. MAB Program, as a result of the U.S. decision to withdraw from Unesco. On the contrary, we intend to intensify our efforts to strengthen and expand this program, which we believe is an excellent example of effective public/private sector cooperation on important problems in the field of environmental science.

I also find in the same document, at the very last question, the secretary's statement on withdrawal noted that we plan to use the resources we presently devote to Unesco to support such other means of cooperation. Does this mean that the Department of State will allocate a portion of these funds to support directly the U.S. MAB effort in the future? Answer: At this stage, such a judgment would be premature.

"The final decision," the last sentence, says, "The final decision would be clearly based on the merits, relevance and needs of the U.S. MAB Program at that time."

Now, I find this all very disturbing. Of course, let me point out that I am the chairman of this program; it is housed in the State Department; I am not a State Department employee, obviously, and not in any way related to Federal Government. I am a private scientist. Therefore, I think I can say clearly that I find this very disturbing. I find on the one hand that this program, which is Unesco's most successful, and which I think we can say has been a major contribution to the United States, is about to collapse internationally. It is going to collapse nationally. It is going to collapse on September 30 nationally, and we have had no—the national committee has had no indication of any funds that will be available at that time.

We have also had the question: Even if we pulled out of Unesco, would that funding then become available, and they say, well, perhaps. Well, "perhaps" wouldn't help. Even more seriously, even if they decided to devote some of that money to the MAB Program at that time, the program will then have been a year dead. Is that going to help it? I don't know.

Anyway, I find these questions very disturbing questions at this time.

Thank you.

[The prepared statement of Mr. Baker follows:]

Written Statement of
Paul T. Baker

for the Subcommittee on Science, Research and Technology and the Subcommittee on Natural Resources, Agriculture Research and Environment, Committee on Science and Technology.

March 15, 1984

Mr. Chairman and members of the subcommittees. As a concerned scientist from the private sector of our scientific community, I welcome this opportunity to present my views on how our proposed withdrawal from UNESCO may affect U.S. scientific and technical cooperative efforts. My interaction with the scientific efforts of UNESCO have been primarily limited to the Man and the Biosphere Program but as past Chairman of the National Academy of Sciences subcommittee on UNESCO Science Programs and more recently as the Academy's representative to the U.S. UNESCO Commission I have broadened my knowledge of the interaction between UNESCO science programs and U.S. scientific endeavors.

During the past fall the decision by the State Department to once again review U.S. participation in UNESCO led me to carefully review the available information on the advantages and disadvantages to U.S. science of our national participation in UNESCO. Frankly, I found this a somewhat bizarre exercise, since I am employed by The Pennsylvania State University where the State government contributes about the same percentage to our total budget that the U.S. contributes to UNESCO and I can't imagine how the scientific and technological interests of Pennsylvania could not be seriously damaged by the withdrawal of State participation. Since UNESCO in its functions so closely resembles a U.S. university, the analogy is an obvious one and the conflicts between what the State governments and the universities see as their functions are also reminiscent of the conflicts between our State Department and UNESCO. Thus, the rhetoric often becomes more important than the product and the State administrator often forgets that the University is funded by and provides services for many more constituencies than the State government.

More specifically to the issue before the present subcommittees, I produced in early November a set of written comments on the topic of UNESCO and American science for the U.S. National Commission based on the format provided by the State Department. Nothing I have learned since that time has substantially altered my views and I therefore include these comments as part of my written testimony. Within those views I merely wish to reemphasize at this time four major points.

1. Because no one or combination of institutions has been provided with the necessary resources for continual evaluation of the involvement of the U.S. scientific establishment with UNESCO, we cannot properly evaluate how seriously our withdrawal from UNESCO would affect U.S. science.

2. Such direct and indirect benefits as U.S. science derives from UNESCO would inevitably be damaged by our withdrawal and no substitute mechanisms exist which could adequately compensate for all potential losses.

3. The deficiences of the UNESCO science programs are primarily related to poor UNESCO administrative policies and secondarily to the low competency level of some UNESCO employees.

4. The lack of U.S. funds for the support of U.S. scientists in UNESCO related scientific and technical activities has for the past decade severely limited the benefits derived by UNESCO activities and restricted the ability of the U.S. scientific community to affect the direction of UNESCO activities.

By December of 1983 the initial reviews requested by the State Department had been completed and at that time I had the opportunity to read the initial document provided by the review committee of the National Science Foundation, the letter written by the Foreign Secretary of the National Academy of Sciences, and some of the responses sent to the U.S. National Commission for UNESCO by representatives of the scientific organizations currently included in the Commission. I found that the views represented were similar to the ones I had previously expressed and on the basis of these views prepared a further document for consideration by the Executive Committee of the U.S. National Commission. As this document, which I include in my testimony, indicates there is strong support in the U.S. scientific community for our remaining in UNESCO. There is discontent for the way the scientific program is administered in UNESCO, but it is generally believed that this problem could be resolved if the U.S. would provide the support necessary for a fuller participation by U.S. scientists.

In reviewing the February 27 release by the Department of State of the U.S. UNESCO policy review, I find that many of these points are not developed. Thus the review gives the impression that we do indeed know how our withdrawal would affect U.S. science but I for one am not clear how such an evaluation was possible given the input I am aware of. Second, I did not see included anywhere in the document that the scientific groups consulted believed almost universally that we should stay in UNESCO. Finally, the document suggested that we could continue to participate in international science and technology at near our present level without UNESCO involvement. Again, unless there was input which did not come from the initial NSF review, the Foreign Secretary of the National Academy of Sciences on the responses of the scientific body representatives to the U.S. UNESCO Commission, I do not know how this optimistic view was derived.

The adverse effects of our withdrawal from UNESCO are ones to which I believe a large number of U.S. scientists could attest. It may, therefore, be much more helpful to you for me to present testimony on the Man and the Biosphere UNESCO science program about which I can write with some expertise, since I participated in development of the international program and am currently Chairman of the U.S. MAB Committee. The International program may be described as follows:

The Man and the Biosphere Program was established in 1970 by UNESCO as a follow-up to the International Biological Programme. Based on scientific research, it is an integrated, interdisciplinary problem-solving approach to the management problems arising from the interactions between human activities and natural systems. MAB projects are often focused on regional and sub-regional levels bringing countries together to work on problems of common concern. Seven of MAB's project areas involve particular kinds of geographic areas (forests, grazing lands, arid lands, fresh water and coastal areas, mountains and tundra), six address systems and processes (major engineering works, demographic changes, urban systems, pesticide use, environmental perception and pollution) and one relates to development of an international network of "biosphere reserves", areas protected for research, monitoring and conservation.

One hundred and five nations currently participate in MAB, each planning and funding its own research within a general program framework defined at the international level. MAB is guided and supervised by an International Coordinating Council (ICC), consisting of 30 national representatives, and serviced by a 9-member permanent secretariat at UNESCO headquarters. The chairman of the U.S. National Committee (Paul T. Baker) is Vice Chairman of the ICC and serves on its 5-member Bureau.

There are currently some 1000 MAB field projects in about 80 countries. According to the Secretariat, perhaps 30 percent would have come into being without MAB, 60 percent have been influenced by MAB and 10 percent would not have existed without MAB. Priority areas for MAB include the humid tropics, arid lands and human settlements. The June 1982 session of the MAB Bureau decided to concentrate on promoting coordinated and comparative studies linking field projects in different countries with cooperative inputs from scientists and institutions of both developing and developed countries.

Over 80 meetings in 1982 and 83 were organized by MAB National Committees and Secretariats or entailed a substantial input from the MAB Programme. The MAB Bureau is also proposing a synthesis of results generated by MAB projects to date, including individual projects and groups of projects. A major achievement in developing publicity for for MAB has been the production and distribution of 1000 copies of a poster exhibit "Ecology in Action" in English, French and Spanish versions, which has been highly successful and in great demand, even in countries having little or no previous involvement in MAB. The exhibit was presented in the rotunda of the Cannon House Office Building, concurrent with a briefing on MAB before the House Committee on Science and Technology, April 15, 1983.

Certainly by the measure of international participation and endorsement by national delegations this has been one of UNESCO's most successful recent

programs. The U.S. national program for MAB began in 1972 and continues, at least through this fiscal year. Since I and others testified last year on the U.S. MAB Program before the Subcommittee on Natural Resources, Agricultural, Research and Environment, I will not reiterate the history and accomplishments of this program but will instead concentrate on the international program and how U.S. withdrawal from UNESCO might affect the U.S. MAB Program.

The international program which was launched as a UNESCO initiative to follow the International Biological Program had excellent support among scientists throughout the world but U.S. participation was reluctant because many U.S. scientists had hoped that the International Council of Scientific Unions (ICSU) which sponsored the International Biological Program would support a follow-up program. Nevertheless, the U.S. National Committee, which was a large group of governmental agency and private organization representatives, slowly succeeded in developing a substantial program by 1980. Meanwhile the international program incorporated an increasingly large number of U.S. scientists including ones inside and outside of the U.S. program. U.S. influence on the international program was most notable in the Biosphere Program where the Park Service of the Department of Interior and the Forestry Service of the Department of Agriculture provided Paris UNESCO Secretariat personnel for the development of the Biosphere Reserve Project within MAB. The U.S. also had a strong influence on the Mountain Research Program and the Tropical Forest Program where the UNESCO Central Secretariat sought out and utilized U.S. experts for the development of the program.

The international MAB Program was most successful in 1980 and 1981, as indicated by the 10-year review which UNESCO voluntarily undertook. This peak was incidentally concurrent with the peak of U.S. financial participation. Immediately following 1981 both the international and the U.S. MAB programs encountered difficulties. In the U.S. program funding declined from 1 1/2 million dollars in 1980 to a budget of 300 thousand this year. In UNESCO the central Secretariat not only failed to receive any increased funding for the international program but was also faced by a budget where the funding was spread over many administrative units. As a consequence the MAB Secretary General (Francisco DiCastri), who had been the dominant driving force, resigned because he could not control the financial resources necessary to keep the program functioning properly.

In the U.S. the history of the MAB Program is equally disturbing. It was the only program to somewhat successfully integrate a large number of natural and social scientific disciplines into an effort to control and understand environmental problems. However, last year the program was about to be terminated. At the last moment the program which was under the supervision of the U.S. UNESCO Commission was continued by the transfer of its secretariat from the International Organization Section of the State Department to the Oceans, Environment and Sciences Section. Nevertheless during the current fiscal year the program is operating with a national committee reduced to some dozen private and government members, a staff of 1 3/4 members

and an action budget of less than 300 thousand dollars. Indeed, the National Committee concluded in early fall that unless substantial new funds were provided by Congress or the State Department by the next fiscal year, the U.S. MAB effort should be abandoned. This view of the U.S. MAB National Committee is reflected by our other agency supporters who note that unless their efforts are backed in the coming fiscal year by congressionally mandated funds or by markedly increased State Department monies they would not provide further funds.

The history of the UNESCO and U.S. MAB efforts thus does not seem to support the Department of State's Review of UNESCO. I see a program which was widely supported by scientists throughout the world and one which, inspite of some early resistance in the U.S., was considered to have great importance to this country. U.S. input into the international program had a great influence, all of which benefited our interests. However, as our commitment was reduced so was the commitment of UNESCO. As a consequence the world is about to lose a program which is of major significance to the U.S. and the U.S. is about to lose a national program which for the first time was addressing the national problem of our natural and human environment with the broad perspective necessary if we are to survive as a species in this complex biosphere.

The urgency and the importance of the problems which MAB is attempting to solve is not conveyed in the Department of State review. One feels, reading the review, that these are minor problems. Indeed it is suggested that somehow the UNESCO science efforts in MAB, while worthwhile, are not that important or that these efforts can be successfully carried forward without UNESCO support. Perhaps they could be carried out but it is not clear from the review how this would occur. As of the moment, U.S. MAB will stop on October 1, 1984, and, even if it should continue, I have no idea of how it would interact with most of the countries involved in the MAB network. If the Department of State knows where the resources for the continuation of U.S. MAB would come from or how these would be made available to U.S. MAB so that it could function as a proper scientific activity, this information has not been made available to the U.S. National MAB National Committee.

Review of U.S. Participation in UNESCO

Comments by Paul T. Baker (National Academy of Sciences Representative) for the U.S. National Commission for UNESCO. Prepared in the format requested by the State Department review, November 1, 1983.

My comments are based on my direct experience with UNESCO as a recurrent consultant from 1972 until 1982, as Chairman of the National Research Council's "Sub-committee on UNESCO Science Programs" from January 1982 until its demise in April 1983, as Chairman of the U.S. Man and Biosphere Program from January 1983 until the present time, and on my current status as Acting Vice President of the International Committee for the Man and Biosphere Program. By profession, I am a Biological Anthropologist. This specialty is considered internationally as a Biological Science, but is in the U.S. categorized as a subdivision of a Social Science. The views I will express are personal and do not necessarily represent views endorsed either by the National Academy of Sciences or the U.S. National Committee for the Man and Biosphere Program. Since my interactions with UNESCO and U.S. participation is limited to the Natural Science and Social Science sector, my comments will be restricted to these sectors.

II. Examination of Programs.

(a) A brief overview of program objectives in the various sectors and U.S. attitudes towards them.

The program objectives of the Natural Science sector appear to be generally compatible with the interests of U.S. scientists. Within the Social Science sector the goals are also generally compatible. However, U.S. scientists do not agree on which of the goals are most useful in this sector. This develops from the polarities within the social sciences in both the U.S. and international scientific communities, i.e. polarities from basic to applied science and from rigid scientific methodology to humanistic approaches.

(b) Specific identification of program activities of value, marginal value, no value, and harm to U.S. interests.
(c) The specific benefits to the United States from the program.

From our current state of knowledge about U.S. participation in UNESCO activities these are unanswerable questions. The participation of U.S. scientists in UNESCO activities is primarily on an individual basis and not through organized programs. Severely limited funds for assessing or promoting our scientific relationship with UNESCO have prevented such groups as the National Academy of Sciences, the State Department or the U.S. UNESCO Commission from determining the extent or impact of U.S. involvement in UNESCO on U.S. science. The problem of appraisal has been further complicated in recent years by the fact that most U.S. scientists perceive a hostility

to UNESCO involvement and thus de-emphasize any relationship. Symptomatic of this problem is the fact that U.S. congressional supporters of the U.S. Man and Biosphere Program believe that our connections with UNESCO must be kept in the background in order to elicit congressional support of a program which would generally be viewed as beneficial to U.S. interests. Thus, in my opinion, it is impossible to accurately appraise the relative value of any UNESCO science program to U.S. interests. Further, any appraisal is likely to under report the extent to which UNESCO activities influence or aid a program in its activities.

(d) An analysis of the extent, nature, and impact of the respective American professional communities on these activities.

Despite the fact that U.S. scientists no longer consider the participation in a UNESCO scientific activity a significant help in their U.S. related scientific reputation, participation remains at a high level. Almost all of the Natural Science sector programs contain U.S. staff members and U.S. consultants are heavily utilized. These participants continue to wield a disproportionate influence on UNESCO science activities as a consequence of the reputation of U.S. science and, from my experience, appear to be highly supported by the UNESCO staff. In my opinion, U.S. influence in the Natural Science sector is stronger than it is in the Social Science sector.

(f) Consequences of U.S. non-participation in the work of each sector.

The consequences of U.S. withdrawal from the Science sectors are rather clear. First, in the Social Science sectors, I believe that the support for any research activities of direct interest to U.S. quantitatively-oriented social scientists would disappear. Furthermore, I suspect that support for many of the non-governmental organizations, such as the International Social Science Council (ISSC), would be decreased or eliminated.

In the Natural Science sector the programs which approach basic scientific problems of interest to U.S. scientists would probably be de-emphasized and the programs designed to emphasize technological improvement in the developing countries emphasized. Such a move would also be likely to decrease the financial support for the International Council of Scientific Unions (ICSU) and its constituent unions.

(g) Alternatives for promoting cooperation on matters of concern to the United States.

Given the public apathy and Federal administrative antagonism to UNESCO in recent years the NGO scientists in the U.S. have attempted to bolster needed information exchanges and internationally coordinated research programs through ICSU and its constituent NGO affiliated groups. In addition, bilateral scientific programs have been supported. These alternatives to working through UNESCO present several limitations and expenses. First, many of the countries in the world do not have a sufficient

number of scientists to assure participation in the ICSU related organizations. Thus, no cooperative efforts involving these nations can be mounted. Second, a high percentage of the National Academies of Sciences and participating scientists from other countries are, indeed, instrumentalities or employees of their central governments. Thus, arrangements through ICSU are government rather than NGO activities. Third, bilateral arrangements require high U.S. governmental expenses, since the administrative expenses are shared by two instead of many countries.

As a consequence, it appears to me that the promotion of many aspects of U.S. scientific interests would be better served by an effective use of UNESCO than they are by the alternative arrangements presently available.

III. Examination of Other Aspects of U.S. Participation in UNESCO.

Of the problems outlined in this section only selected ones bear a relationship to the interests of U.S. scientific communities. The problems of budget and management of U.S. participation in UNESCO deserve comment.

The current C/5 program and budget document issued by UNESCO suggests a particular problem. The scientific programs of importance to the U.S., such as the Man and Biosphere Program, the Oceans program, and the other international scientific efforts which have been strongly supported by this country, have suffered relative to the total UNESCO budget. Almost all of the significant increases have been in areas of little or no interest to U.S. science. This has occurred in spite of the fact that the representations from this country and others, including a number of developing countries, have stated repeatedly that these are among the most useful and desirable.

Perhaps more importantly, this section of the proposed report raises the question of "management of the U.S. participation in UNESCO." As the 1982 report, "A Critical Assessment of U.S. Participation in UNESCO" by the U.S. National Commission for UNESCO, points out, this management has been almost nonexistent. The problem of how to interact with and utilize UNESCO has been left entirely within the scope of the IO section of the State Department which was also given the responsibility of overseeing the operations of the U.S. National Commission for UNESCO. These programs have operated in very limited budgets with no substantial congressional or administrative mandates.

Almost incidentally the National Science Foundation and through NSF the National Academy of Sciences were asked to examine our scientific relationships with UNESCO. Thus, the responsibility of any group has been limited and our abilities to appraise our involvement with UNESCO inadequate. We have not invested funds commensurate with our dues to participate fully in UNESCO activities. As an inevitable consequence, our ability to utilize UNESCO for our scientific or other purposes has been minimal. Thus, if we are not deriving a benefit from UNESCO proportional to our annual dues, then judged in terms of the science sectors,

the fault lies not so much within UNESCO itself as it does with the failure of the Federal government to provide the resources for exploitation of scientific activities in relation to UNESCO.

IV. U.S. Policy Options.

In terms of the science sector, the options and their relative costs to the U.S. appear obvious. One, if we withdraw, we will still have a pressing need to solve many problems of great importance to the welfare of the U.S. which are international in scope. If we could not use the UNESCO structure, we would have to use alternatives such as ICSU or bilateral agreements. To obtain the funds for ICSU to do the necessary job, a sum equal to our UNESCO dues would be required; while bilateral agreements would be much more expensive. Attempts to mount appropriate international cooperative programs of the scale demanded through ICSU would require such massive U.S. financing and influence that many participating countries would refuse to cooperate. Even if most countries represented in ICSU did participate, many programs would suffer, since, as noted earlier, only a limited number of countries are members.

Two, despite the fact that many national governments have a distorted or negative view of U.S. political goals, there exists a universal respect for the quality of U.S. science. Therefore, we can exert strong leadership in this sector of UNESCO, provided we mobilize the Federal funds necessary for a strong infrastructure which supports U.S. participation in UNESCO science activities and publicize the benefits derived by the U.S. in this activity.

V. Conclusions.

In terms of the science sectors of UNESCO, the U.S. continues to exert a strong influence and derive multiple benefits although the extent of participation and benefits cannot be precisely defined at this time. Withdrawing from UNESCO would inevitably be detrimental to U.S. scientific needs, unless funds equal to or greater than UNESCO dues were expended. In order to improve the benefits we derive from UNESCO participation, increased Federal funds for assessing and increasing our involvement in its scientific structure and its research programs are needed.

U.S. Science and UNESCO - A positive need.

A statement of opinion prepared by Paul T. Baker for the Executive Committee of the U.S. National Commission for UNESCO, December 15, 1983.

United States participation in the United Nations Educational, Scientific and Cultural Organization is once again being questioned. As the U.N. organization with the most diffuse of all mandates its actions and its bureaucratic problems have often raised the ire of groups within and outside the U.S. government. As a consequence, the State Department is currently conducting its fourth major review in the last 15 years of U.S. participation in this organization. These frequent reviews and the complaints which stimulate them increasingly promote the view that our participation in UNESCO is a waste of money and effort. Indeed, in some ways we have already decreased our participation since Federal funds to support the UNESCO Commission and the National Science Foundation's program for international affairs, which includes UNESCO, have been progressively reduced in recent years.

Should the U.S. withdraw from UNESCO or alternatively reduce its commitment? The scientific interests in this country are responding, as in the past, that we must not withdraw. The response from the National Science Foundation review of the Natural Science Sector activities cites eight international UNESCO science activities as "distinctly beneficial" to the United States and notes, "No projects harmful to U.S. interests are reported." The report continues by listing seven major benefits U.S. science derives from participation in UNESCO and discusses the consequences of non-participation in the organization's Natural Science Sector as follows:

> The withdrawal of the United States from UNESCO science activities would lead to a significant reduction in the direct access the U.S. scientific community now enjoys to important data bases,

> localities, and scientific resources throughout the world. Withdrawal from UNESCO membership would result in a general decline in the leadership position the U.S. now holds in international science and also contribute to the further politicization of UNESCO in ways detrimental to U.S. national interests.

Similarly, the Foreign Secretary of the National Academy of Sciences (NAS) responding to a State Department query reported:

> Certain sciences, particularly those concerned with the oceans, climate, the solid earth and the biosphere, depend critically on international cooperation. The assistance of governments is frequently required for access to areas and data needed by U.S. scientists working in these disciplines, and Unesco is a forum in which such cooperation by governments can be achieved. There is much criticism levelled at Unesco programs, structure and management, but, in the area of the sciences at least, there is no real alternative to Unesco at the present time.

A third major organization, The American Association for the Advancement of Science, responded to the U.S. UNESCO Commission as follows:

> AAAS supports the conduct of the policy review of UNESCO participation by the U.S. and urges the interagency task force to make specific recommendations to strengthen the U.S. voice in UNESCO affairs. The U.S. should continue and enhance its active participation in UNESCO affairs.

A very long list of such statements on the need for U.S. scientific participation in UNESCO has appeared. The social science professional organizations, less satisfied with the UNESCO program than the natural sciences, emphasize that as a nation we must participate in UNESCO efforts. Given these responses it is obvious that suggestions we should withdraw from UNESCO are not supported by the scientific community.

Would reduction in commitment, in fact, improve our return from continued involvement in UNESCO? Again, the responses to the question are unanimous in suggesting that improvement can be made not by reducing the commitment but by increasing it. Thus, the NSF report states:

> The United States' negative attitude to its commitments, responsibilities, and participation within UNESCO hinders the achievement of U.S. national objectives.

and among its conclusions states,

> A stronger leadership role in the United States is necessary to obtain maximal benefits from scientific participation in UNESCO. A high level commitment to the central management and coordination of all U.S. participation, coupled with increased resources to support programs of U.S. priority and interest, are essential steps to be taken to achieve national objectives within UNESCO.

The Foreign Secretary of NAS summarized the problem in his response by writing,

> Without an appropriate and funded infrastructure to manage our investment in Unesco, frustration is bound to continue.
>
> For a change a U.N. related policy question seems clearly answered.

The real question is whether the U.S. public and government can respond to the answer.

Mr. WALGREN. Thank you very much, Dr. Baker, for that review, and let me turn to the gentleman from New York for initial discussion and then we will proceed with other members.

Mr. SCHEUER. Thank you very much, Mr. Chairman.

Dr. Baker, it had been my understanding until your testimony that withdrawal from Unesco on our part would not preclude continuation of our domestic Man and the Biosphere Program, but both in your oral and your written testimony, you seem to feel that that program is grinding to a halt and by October 1 of this year, it will be terminated because of the funds being closed off.

Why is this? Is it because the administration doesn't want a domestic program? Might there be a change on the part of the administration if they decide to withdraw from Unesco; might they then decide to substitute the funds—some of the funds that they would have put in Unesco to our domestic Man and the Biosphere Program? And if it isn't a question of funding, what are the objections that we have to a—to a healthy, productive domestic program, particularly in view of the fact that there at least looms over us the possibility that the administration may stick to its decision and pull out of the Unesco Man and the Biosphere Program?

Mr. BAKER. Well, I wish I could offer an answer to this. I really cannot. I can only really tell you what I know, what the national committee knows. The national committee and I know that at this moment, there are no funds for continuation, nor is there any action on the books requesting that funds be made available, nor is there any bill in Congress to make funds available, and if there are no funds, I don't see how we can have a program.

Now, as to the question of would some of the funds after withdrawal be devoted, again, I can't answer that. The answers that we have available to us are the ones that are written here saying that, as of the moment, there is no decision on that and it would have to be reviewed at some future time.

Mr. WALGREN. Well, not to prolong this question, I am a very keen supporter of the Man and the Biosphere Program, both the Unesco program and the domestic program. Now I understand that our participation in Unesco may be imperiled; we may find a solution to that; we may not, but it seems to me there would be merit to continuing an even more fortified domestic program as a sort of standby, fall-back, worst-case capability.

Would you like to see a congressional initiative reinvigorating and fortifying the domestic program on a sort of a standby basis to be triggered if, per chance, we do follow through and withdraw from the Unesco MAB Program?

Mr. BAKER. Yes, of course there are a great many things we can do, whether we are related to Unesco or not. There is no doubt about that. It fills a particular niche that is not filled by any other program in this country, and that is because of its breadth. Almost all other research and policy programs that work through the Federal Government tend to be rather discipline-specific or extremely limited in mission, and it is the breadth of this program that is unusual. It is also the fact that it attempts to tie the research to policy advising on environment areas.

So, yes, of course we can do those things and I think we can do them well. I think that we can maintain some international links. What these will be like, I think the major problem is we could still maintain perhaps contact with some of the other national MAB committees, but of course, one wonders what the MAB committee is going to look like anywhere else in the world under these conditions.

Mr. SCHEUER. Well, it is my personal hope that we will be able to find the justification to continue in the Unesco program by the end of this year and that we will have good and solid justification for doing that and that we will provide the rationale, perhaps, for a reversal of the administration decision.

We do have a 10-month open window and an open opportunity to reverse some of the processes and some of the problems that have been identified. But it seems to me that in any event, we ought to have our domestic MAB program as a sort of a standby capability for an ongoing effort in which we would cooperate with other nations through their national MAB programs and sort of—well, build a fallback structure and I will be talking with Congressman George Brown and other members of this committee who I know feel the same way as I do and perhaps we will find a way to provide some funding.

I appreciate your testimony very much.

Mr. BAKER. Thank you.

Mr. WALGREN. Thank you, Mr. Chairman.

Thank you, Mr. Scheuer.

The gentleman from New York, Mr. McGrath.

Mr. MCGRATH. Thank you very much, Mr. Chairman.

Dr. Baker, I have to take some issue with your assertion that the problems with Unesco are strictly administrative. When you see—and we have heard from our ambassador—and you have read in the paper, and other governments have complained bitterly about the anti-American resolutions that come out of there, the anti-Israeli resolutions, the political censorship of the press. Those things are clearly not administrative. As far as the administrative concerns are, when it comes to the lack of—and you mentioned it yourself—the lack of accountability of the funds, the top-heaviness of the Paris operation absorbing 80—over 80 percent of the personnel and 80 percent of the budget, and the fact that they are delving into areas outside of their own purview certainly suggests that there may be more than just an administrative problem here.

With respect to the—you mentioned in your testimony that very little of the—or there was no clear cost-benefit analysis available regarding that $50 million contribution that we make as it applies to U.S. scientists. Could you elaborate on that a bit?

Mr. BAKER. Yes. Let me make just one reply to your first comment and that is that I was speaking only of the science programs, that I am not speaking of the whole question of our involvement in Unesco or anything else. I am only saying that in science programs such as MAB, politics are not the problem; the administration is.

Now, coming back to your second question on the accountability or our ability to assess the impact, this has concerned all of us who have looked at this question. I met with an ad hoc committee put together by the foreign secretary of the National Academy of Science. We met in early February, and we were very concerned that at this point, we were unable to assess this impact on science and we felt that really we also were not able to make suggestions on how to go about finding alternatives.

So the ad hoc committee asked the foreign secretary to go to the governing board of the National Academy of Science and request permission to do a more thorough study of this question.

Mr. MCGRATH. Perhaps the GAO will report that the investigation that is going to take place of Unesco and their funds and how they are distributed might glean some insight into your particular problem.

Mr. BAKER. Well, I think it can give us some information on the finances, but I think our concerns are broader than just the financial question of back-and-forth money. What we would like to do is assess the real impact on science, the scientific activities that have been involved in the relationship.

As a matter of fact, if I may, I might note just what that—what the governing board authorized the foreign secretary to do. It authorized him to form a committee to first of all inventory the existing relationships; second, to analyze the extent to which they depend critically on affiliation with Unesco; third, to suggest possible interim alternative arrangements utilizing, for example, organizations within the ICSU complex; and fourth, to develop some initial recommendations regarding future directions, both inside and outside of Unesco, focusing on improved international arrangements for global science cooperation.

So I believe that this effort is proceeding and perhaps in the near future, if it is successful, can provide better information than is available right now.

Mr. McGRATH. Are there no other international fora in which we could participate in order to get the same kind of benefit in your particular area, MAB programs?

Mr. BAKER. In the particular area of MAB, at present, there is not; it doesn't fit into any of the other U.N.-related agencies. It has some particular parts that relate to FAO and particular parts that relate to WHO, but the basic program does not fit in the U.N. agencies.

Within the non-U.N. agencies, as I cited, the only possibility is the International Council of Scientific Unions, which has the breadth, and there the difficulty is that this is a very small organization with only the staff members—there are only three staff members. It is based on countries which have national academies of sciences, of which only about half of the countries in the world do, so that while it might in the future be possible for that organization to be builtup, developed in some way, develop a separate secretariat for such a program, and so forth, this would obviously entail a matter of several years work.

For example, when this organization supported the international biological program, it took them about 7 years to build an appropriate structure outside of the Secretariat and take over the functions. It has been done, but it is a long process.

Mr. McGRATH. It is my understanding that Gregory Newell, from the State Department, has made, I believe to the scientific community, some assertions that should we decide to pull out of Unesco after this review, which is going to be coming up, that the State Department will work with the scientific community in the United States to establish fora outside of the United States for specific scientific—the scientific purview of Unesco.

Are you not aware of that?

Mr. BAKER. Yes, I have heard these statements, yes, sir.

Mr. McGRATH. Thank you.

Mr. SCHEUER [presiding]. Congressman George Brown.

Mr. BROWN. I only wanted to explore one aspect of the Man and the Biosphere Program with you. As Chairman Scheuer indicated, we have had a longstanding interest in this program and its predecessor program and I was wondering what the relationship of the current research and the biosphere reserve program might have to the vastly increasing interest that we're developing in the ecological impact of acid rain.

Do I understand that your reserve program might give you baseline data from which we would be able to make estimates of the impact of acid precipitation or other man-made pollutants on natural ecosystems?

Mr. BAKER. I have to answer that with a "perhaps." I am not completely informed, but I can—we have, just in the past year, began to explore monitoring programs using the biosphere reserve. We are progressing with this. We have not, as of the moment, I think—and I would have to call on Dr. Gregg here, who is in charge of our biosphere program, to answer it fully, but I think we

are not at the moment involved in acid rain measurement as part of the biosphere program.

How valuable—am I right—I have an answer. All right, all right. The answer is, yes, we do have one group interested in doing that and a single proposal to start this. This is pretty much what I—nothing is actually underway, but in part, this could be done, yes.

Mr. BROWN. Thank you.

I have no—no further questions, Mr. Chairman.

Mr. SCHEUER. Congressman Skeen.

Mr. SKEEN. Thank you, Mr. Chairman.

Dr. Baker, I appreciate the thrust of your arguments and so forth and from where you are coming, but I am a little amazed at some of the baseline figures that we are dealing with in this question that some 80 percent of the funding in Unesco goes to administration. That leaves about 20 percent, the way I figure it, to scientific work. Is this a misassumption?

Mr. BAKER. I really would hesitate to claim enough expertise on how it operates—how the budget operates to give it a breakdown. It is very difficult in an organization—or I can only give my impressions from having spent some time there as a consultant—in that it is difficult to—to divide the actual funds spent and say what is administration and what is a functioning program.

In a sense—for example, in MAB, what the Secretariat and the staff do is, in a sense, all administration in that they are stimulating the establishment of national programs, exchanging information across it, trying to provide some guidance, so in a program like that, if we actually talked about what percentage went into, say, internal administration, and what did useful science management, I would think that the percentage would not be anything like that, but it is a very hard kind of question to answer, really.

Mr. SKEEN. Well, I won't hold you to the budgetary things, but I was just curious if that was a primary awareness on your part, and I didn't—I am not trying to nail you on any of that portion of the thing.

I can understand how you feel about it. I was just curious just what level of awareness you had about that kind of funding figures. Let me ask you this: You did mention in your testimony that a lot of the deficiencies that Unesco has been—that have been publicized about Unesco are administrative—or that you have noticed yourself—have been.

Could you give me just some specific example?

Mr. BAKER. Yes, I suppose I could. In one sense, a real problem in Unesco is that Unesco was organized in a very rigid format in the early 1940's and 1950's when it was established, a format that resembles a French university. That is, it has divisions of natural science, social science, culture, and then under that are separate little boxes which are like departments in a university, and Unesco has never been able to reorganize that in any way.

In other words, the big difficulty we have had with the MAB program is that if the money for a particular program goes partially in the natural science section of the science sector and another piece goes over in the social science, in one of their divisions, there is no—there is competition between them; there is no agreement

on how to spend it. An enormous amount of time wasted trying to take these two little packages of money and make a program.

So one problem is a rigid structure that has been unable to change. Another kind of rigid structure that has been a tremendous problem is that—oh, as simple a thing as if you want to write a letter, the letter has to go five levels of clearance before it can get out. So, to make a program work, such as MAB, I must honestly say that what the staff members do is write the letters, take them over to the French post office and pay the postage themselves.

It is this sort of difficulty at all functional levels that occurs in the rigid structure and the difficulty of any modification of it.

Mr. SKEEN. In this connection, I think that the contribution the U.S. makes is something like $50 million. Is that not correct?

Mr. BAKER. Yes.

Mr. SKEEN. I get the inference by what you said in your testimony, too, that very little of this contribution goes to support the work of U.S. scientists.

Mr. BAKER. I don't mean to give that impression. I mean merely to say that we don't know at this point. I can say that in relation to the U.S. MAB program, yes, significant amounts of money have come back into the United States directly through that program. They have—they have supported numerous scientific endeavors, state-of-knowledge reports by American scientists, working with other countries, payment of per diem and travel. They have used Americans as consultants working with projects, which not only provides them with money, but also provides them with scientific improvement and knowledge.

So I—whether—what figure it is would be a very interesting one to know. I feel doubtful that we get back $50 million, but I don't think it is minor. I think it is a significant portion, but I am just guessing.

Mr. SKEEN. Let me move the question just another little facet and ask you this: Is there a general reluctance, to your knowledge, for U.S. scientists to participate in Unesco projects or to be supportive of the thing, and what would it take to improve the kind of interest that U.S. scientists would deem necessary to invite their participation?

Mr. BAKER. I—I don't think there is a reluctance in the ordinary sense. I think Unesco—or in the times I was associated with it and I think they could turn to American scientists and say, "Would you"——

Mr. SKEEN. Let me say, is there a reticence?

Mr. BAKER. Well, there is not a reticence, but there is a feeling of this is not going to give me any prestige. My colleagues won't care whether I do it or not. That, in fact, the whole——

Mr. SKEEN. You mean prestige is very important to scientists? [Laughter.]

Mr. BAKER. Ah, yes——

Mr. SKEEN. Oh, I see.

Mr. BAKER. Oh, yes, I'm sorry. I failed to——

Mr. SKEEN. Thank you, doctor, I am very well aware of that. [Laughter.]

One last question, and one of the other criticisms of the program and so forth—of course, this is more political and out of the science line, but I am told that the Unesco program, for instance, in Argentina, is totally staffed by Russians. Is this—are you aware of this—for education, I mean? In the educational program?

Mr. BAKER. No, I'm sorry, I really don't know much about staffing in field offices. Of course, there is a set percentage by—or an allotment by country of employees that goes on, and—but whether or not there is any consideration of the relationship between the country of the scientist and where they are sent to to work, I don't know.

Mr. SKEEN. Well, I want to strongly emphasize again, this was in the educational program Unesco had there——

Mr. BAKER. Yes.

Mr. SKEEN [continuing]. I was just very curious about that. I thank you very much, Dr. Baker, and I thank you, Mr. Chairman.

Mr. SCHEUER. Thank you very much, Dr. Baker. We very much enjoyed your testimony. We are grateful to you for joining us.

Next, we will hear from Dr. William A. Nierenberg, director of the Scripps Institute of Oceanography, University of California at San Diego in La Jolla.

Dr. Nierenberg is chairman of the Committee on International Science of the National Science Board and he was Assistant Secretary General of NATO for Scientific Affairs. We are delighted to have you, Dr. Nierenberg, and if you will simply chat with us for 8 or 10 minutes, I am sure we will have some questions for you after that.

STATEMENT OF WILLIAM A. NIERENBERG, DIRECTOR, SCRIPPS INSTITUTION OF OCEANOGRAPHY, UNIVERSITY OF CALIFORNIA, SAN DIEGO, LA JOLLA, CA, CHAIRMAN, COMMITTEE ON INTERNATIONAL SCIENCE, NATIONAL SCIENCE BOARD, MEMBER, VARIOUS PANELS OF THE PRESIDENT'S SCIENCE ADVISORY COMMITTEE, ASSISTANT SECRETARY GENERAL OF NATO FOR SCIENTIFIC AFFAIRS, 1960–62

Mr. NIERENBERG. Mr. Chairman, Congressman——

Mr. SCHEUER. And don't hesitate to refer not only to the highlights of your own prepared testimony, which, of course, will be printed in full in the record, but to anything that you have heard transpire this afternoon that has piqued your interest.

Mr. NIERENBERG. Yes, sir, Mr. Chairman, Congressman Brown, it is a real pleasure to be here and see—

Mr. SCHEUER. Maybe you can pull the mike up just a little closer.

Mr. NIERENBERG. Yes, sir—and I—just like so many things I am doing lately, I have to start off by apologizing—I seem to be doing that all the time lately—for not having a written statement, but my notification—my ability to appear here has been very short, actually inadequate. And the other reason is, I started several months ago on the matter actually and I have been studying it and I have been taking lots of testimony on the questions that you have asked me to talk about and I have fairly complete information now, but it is not completely assimilated.

I do, Mr. Chairman, ask your indulgence in addressing the reporter. I have some minor address corrections. It is the Scripps Institution of Oceanography, not the Scripps Institute. We are slightly sensitive about that, and I did remember suddenly that many years ago, and for quite a while, I was a member of the U.S. National Commission of Unesco also, although I have to admit that it was so long ago that the experience—memories I carry from that time really bear very little on the questions that are before us today and so everything I will talk about is really only from very recent knowledge and research.

I will, Mr. Chairman, try to be responsive to the committee's request, which was, first, to discuss, evaluate the effects on American scientific and technical efforts and also on my views on alternatives to Unesco for scientific and technological efforts, as well as the impact of United States withdrawal on the flow of international scientific information across national boundaries.

Now, before I do, I would like to make two general comments and to point out that there is a tendency throughout discussions of this nature to exaggerate the relative importance of direct governmental efforts in international science activities. Exchanges take place outside of governmental framework to a far larger degree than is normally recognized. Personnel exchanges, like sabbatical leaves from universities, scientific journals, and international meetings are powerful in this regard.

The second point I would like to make—one I generally do before I begin almost any discussion of this kind, is that distinction must be made between the experimental sciences, like laboratory physics, chemistry and biology on one hand, and the observational sciences, like oceanography and meteorology on the other. The former play very little role as far as benefiting U.S. science by Unesco. The latter, however, can benefit U.S. science, and provide a geographically cooperative nature of the associated activity.

This has been said somewhat differently before this committee and other groups, but it carries the same meaning.

Now, before going into detail in the discussion, it may be useful to offer you my overall summary in response to your questions. The summary effect, as far as my investigations to date go, on the U.S. scientific effort would be minimal, particularly because in almost every case, there are adequate alternatives. Now, like all sweeping summaries, some precision is required. The activities in question are certainly worthwhile, but are expensive compared to results obtained.

This emphasizes the feasibility of using alternate routes, provided that the moneys now committed are carefully husbanded and systematically reapplied using the new channels.

The moneys are currently allocated to many small activities, so that it is difficult to examine alternatives on this fine scale. However, at the macro level, the statement about existing alternatives seems correct. In particular, I have examined the State Department's assessment of the scientific situation and I find it a commendable and realistic evaluation.

Now, as an aside—and as an answer to a different question, Mr. Chairman—I point out that this time may be just the right time to do a rethinking of our entire sweep of activities in international

science. My remarks apply with some minimal reservations to all the relevant Unesco programs, but I will choose just one to review in slight detail, because it would seem to be most typical, and these are the ocean-oriented actvities of the international governmental oceanographic commission, the IOC, which is so often referenced in these discussions.

There are many subprograms in this regard. They have wonderful acronyms. One—I can't pronounce this one—is the WCRP, world climate research program. One of the parts of it is IGOSS, the integrated global ocean science service system, which is done in cooperation with the World Meteorological Organization.

The second is IODE, which is the international oceanographic data exchange, which is also carried out in conjunction with the World Meteorological Organization, but also with SCOR, which is the scientific committee for ocean research, which is a branch of ICSU, and I know I don't have to explain that acronym before this group.

I did not get a direct reference, but I am reasonably sure that a third such program is WOCE, the world oceanographic circulation experiment, which I might emphasize is an extremely important experiment, which is—I am sure it takes the attention of the IOC, along with SCOR and other organizations, like the World Meteorological Organization, the WMO.

I did mention IGOSS, which is a separate entity, separately from concern with world climate. The international ocean science survey—international ocean service system—which is, again, as I said, in conjunction with the World Meteorological Organization, is very important from the viewpoint of supplying services, and I might say, also, with IODE, which I mentioned earlier in this different role.

A third program is the NODC, the national ocean data centers, which is a global network of national ocean data centers which are coordinated by IOC.

Another one—I am perhaps going on too long, there are a number of these—is the MEDI, the MEDI, the marine environmental data information referral systems, plus the OETB, the ASFIS, which are for supporting aquatic and fisheries information systems and their primary cooperator is the FAO, the Food and Agricultural Organization, and many others.

This is an impressive list, but in most cases, the IOC is not the lead organization and its contribution could be assimilated by either the World Meteorological Organization, the Food and Agricultural Organization and the scientific committee for ocean research. To try to say something nice, not be negative always, the SCOR is generally the operating organ of these programs. It is an excellent organization and has a fine record for carrying out programs in a very positive way and has been very successful in the past and will be in the future.

As a last comment, Mr. Chairman, before I make myself available to various questions, we must recall something that has probably been said here before, that the IOC is formally not a Unesco organ itself, and membership in Unesco is not a requirement for membership in the IOC, no more than it is for membership in the FAO and SCOR.

Thank you, Mr. Chairman.

[The biographical sketch of Mr. Nierenberg follows:]

Professor William A. Nierenberg
Director
Scripps Institution of Oceanography

December 1983

Professor William A. Nierenberg is Director of the Scripps Institution of Oceanography and Vice Chancellor for Marine Sciences of the University of California, San Diego. He has been asssociated with the University of California since 1950, and joined Scripps as director in 1965.

Primarily known for his work in low-energy nuclear physics as professor of physics at Berkeley and at the University's Lawrence Radiation Laboratory, Berkeley-Livermore, he has established himself as a leading expert in the field of underwater research and warfare.

He served in Paris as Assistant Secretary General of NATO for Scientific Affairs in 1960-62, and at the same time was Professeur Associé at the University of Paris.

On the national level, he has served on various panels of the President's Science Advisory Committee, and was a member of President Reagan's Task Force for Science and Technology, a transition advisory group. In 1971 he was appointed by the President as chairman of the National Advisory Committee on Oceans and Atmosphere and served on this committee until 1977. He was a member of the National Science Board from 1972 to 1978, and was nominated by President Reagan for another term from November 1982 to May 1988.

Professor Nierenberg has been a consultant to the Navy, National Security Agency, Institute for Naval Analyses, and Department of Defense, including some 20 years of service on a prestigious panel of advisors to the military, called JASON, for which he is now chairman. He recently served on the MX Basing Panel, an advisory committee named by Secretary of Defense Weinberger to recommend basing of the MX missile. In 1976 he was appointed one of two senior consultants to the then newly formed White House Office of Science and Technology Policy. He was a member of the NASA Advisory Council and served as its first chairman from 1978 to 1982. He was an elected member of The Council of the National Academy of Sciences (1979-82), and has been a member of the Academy since 1965. He is a member of the National Academy of Engineering.

He is a member of the Board on Atmospheric Sciences and Climate of the National Academy of Sciences National Research Council, and was Chairman of the Board's Carbon Dioxide Assessment Committee whose report, "Changing Climate" was recently published. Among Professor Nierenberg's other current affiliations he is Chairman

of the White House Office of Science and Technology Policy Acid Rain Peer Review Panel; member of the Defense Science Board; member of the Marine Science Sub-Committee of the Advisory Committee of Law of the Sea; and Advisor-at-Large to the Department of State since 1968. He served as president of Sigma Xi, the Scientific Research Society, the nation's largest scientific society, 1981-82.

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He was born in New York City in 1919. He attended the University of Paris in 1937-38, returning home to receive his B.S. degree from the City College of New York in 1939, graduating with honors. He received his Master's degree in 1942 and Ph.D. degree in 1947 in physics from Columbia University. From 1942 to 1945 he was a section leader on the Manhattan Project.

Professor Nierenberg has received numerous awards and honors for professional research and public service. In 1958 he was selected as the first E. O. Lawrence Memorial Lecturer by the National Academy of Sciences. He was recipient of the Golden Dolphin Award of the Association Artistico Letteraria internazionale (1968) of Florence. He was awarded the Medal of "Officier de l'Ordre du Merite" from the Government of France in 1971. In 1975, he was recipient of the Compass Award of the Marine Technology Society. He was awarded the Procter Prize by Sigma Xi in 1977. He presented the annual Richmyer Lecture at the joint meeting of the American Association of Physics Teachers and the American Physical Society in 1979. He was the Phi Beta Kappa Lecturer at the 1980 annual American Association of the Advancement of Science meeting. In 1982 he received NASA's highest civilian award, the Distinguished Public Service Medal.

Professor and Mrs. Nierenberg have a son, Nicolas, and a married daughter, Victoria Tschinkel.

Mr. SCHEUER. Thank you very much, Dr. Nierenberg.

Mr.—Dr. Nierenberg, you say that there are good alternatives to U.S. participation in NATO if we take the trouble really to structure them intelligently.

Mr. NIERENBERG. Well, it is kind of a sweeping generalization, yes, sir, but that is essentially the case. It varies, you know, from application to application. As an example, if you were to ask me—which you didn't—is there one poorer alternative than the others, the reviews I have from the geological survey on their science programs would indicate that it would be harder in that case to find alternatives, although it is not impossible, whereas in the case of the world climate program, I think it would be very, very easy to deal via SCOR and/or metereological organization, as an example. But taking it on the average, the answer would be yes, yes, sir.

Mr. SCHEUER. Yes. Well, now, as I said before, I am hopeful that we will—that changes will take place and reorganization and reform will take place that will make it palatable and acceptable for us to stay in NATO—in Unesco, but let's assume that that doesn't happen and that we stick to our decision. That is always a possibility. It may be a likelihood for all I know.

It seems to me that we ought to have a fall-back position and it ought to be a carefully structured, rational design. We ought to put the bricks into place to form the structure of our alternate modus vivendi in the field of oceanography, weather, climate and whatnot, to replace the Man and the Biosphere Program of Unesco's, which is the jewel in their diadem. We don't want it to see—to see it gurgle down the tubes with no replacement, but it seems to me that we ought to look upon this 10-months window of opportunity as a two-stage rocket: First, to see if there isn't the leadership in Unesco to make the necessary changes and improvements that we are looking for, and alternatively, on a second level, you know, this can be a Shakespeare play with five concurrent plot lines going on for the next 10 months.

At least on a second level, the plot line would be structuring a carefully designed, integrated, holistic structure for carrying on these programs outside of Unesco through bilateral and multilateral programs.

Now, I—do you know anyplace where that kind of thinking is going on?

Mr. NIERENBERG. The answer is yes, Mr. Chairman, but let me go back—I agree with both of your remarks very strongly. I hope that—and I don't know if this is proper—I must compliment you on the initiatives you have taken that I have read about in the newspapers—in getting Unesco to take some action, and I would like to think that the combination of the administration's action and your initiative will end up in the first result that you described.

If that doesn't happen, I agree with you that we should have very concrete and specific alternatives outlined. Now——

Mr. SCHEUER. Now, where does the Congress get that kind of thinking from your profession?

Mr. NIERENBERG. Well, I—I have just received indications just before I came—they are informal and not pinned down—that the State Department is beginning to work on doing just exactly that. I

am not clear that the administration and State Department yet appreciate how much work is involved in doing all of this and the limit, the time limit that is involved, which is very serious. Not only because you have organizational questions that span a tremendous variety of disciplines and activities, even given the alternatives that I mentioned, but also there is a money issue. It is so easy—it is so easy, Mr. Chairman, for $15 million—and that is approximately what we are talking about—with the fraction of the $50 million that was discussed before, that is going to science—and that is what we are talking now—is about $15 million in these activities.

If Unesco—if we don't rejoin Unesco, it is very vital that this $15 million be wisely used, and that was my reference in the report to end doing exactly what you described in building the structure and seeing that these moneys are channeled—are put into the channels that I described that I think are genuinely available.

Well, I just received an indication—I can say very little more than that, Mr. Chairman—that the State Department is beginning to work on this problem and apparently will discuss the—will involve the appropriate governmental organs and the National Academy of Sciences in this process.

I am concerned, as you are—and I don't mean to be more precise than you are—but it is not 8 months, it is 7½ months that is available to us.

Mr. SCHEUER. Thank you very much, Dr. Nierenberg.

Congressman George Brown.

Mr. BROWN. I have no questions.

Mr. SCHEUER. Congressman Skeen.

Mr. SKEEN. Thank you, Mr. Chairman.

Dr. Nierenberg, I was very interested in what you had to say to an important question that I have that the chairman asked. If—and I don't—I don't choose to use his words because I think that if it is a negative thing like fall-back position and so forth—Unesco was initiated in 1946, right along with the institution of the United Nations, and so it has been in existence for all this time and there seems to have been, rather than an improvement in the administrative programs and so forth, there has just been a steady deterioration. This is somewhat bothersome because if the idea, so far as the scientific people are involved in this thing concerned with the production, and some positive production in international science and the communication.

We have had other problems in this area before. Some of them with political involvements and so on, but it is bothersome to me that if we gave up all of this position that we are supposedly enjoying under the aegis of operating with Unesco, that it seems to me that with the alternatives that you have outlined today, that we probably would be jumping forward rather than falling back and that you have given us some alternatives, but it isn't—as you said, it ain't gonna be easy.

So I appreciate the position, but it was—I was most interested in what kind of alternatives that you, as scientists, see in picking up programs and I think that along with the budgetary concerns that we have already talked over—and I know it is probably not a fair position to put people in the scientific world in and say, you know,

do you know what is happening with the budget and this is going for administration and so on, but I do appreciate your stance.

I hope, too, that the administration enunciates very clearly that they do have a program for a second position, if you want to term it as that, and so I just wanted to tell you that I do appreciate your coming and I have no questions to ask.

Mr. NIERENBERG. Mr. Chairman, could I make a comment on that, at least part of it? I don't hesitate to talk about administration. I have never been able to separate taking money from the Government and administrating it at the same time—or from anybody else.

Mr. SKEEN. That is a realistic viewpoint.

Mr. NIERENBERG. Well, it is true. I mean, it is a very big part of it and I am going to drop a boast I have never had the chance to do before. When I was the Assistant Secretary General of NATO, along with my successors, we administered programs that are very similar in NATO, scientific programs that are very widely acclaimed: our summer schools, fellowship programs. Right now, they run about—I lose touch, but about $11 or $12 million a year for a far lesser number of countries, and it is done with a remarkably small staff. It has probably grown since my day, but all we had were about six professionals and four secretaries in the entire office. I want to tell you, the overhead was very, very low. I am very sensitive to that and I think that there are real problems, it is admitted, in that, but you know, we can only comment about the scientific part of the program and the administrative part, of course, which I think goes along with it.

There are other issues and in all fairness, you know, Mr. Chairman, we do do international science for reasons other than benefiting American science. My testimony is restricted to that. I was asked to talk about that and not talk about the other aspect and I am sure that comes up in other hearings.

Unesco has been a vehicle, along with other international organizations, in helping other countries, you see, develop themselves and so that is another question that has to be looked into as to how well they have performed in that regard. I can only say I am always suspicious when an organization takes 90 percent of the money in overhead—I think it is 90, rather than 80, incidentally—you see, as to how much they can carry out of their functions, scientific or otherwise.

But perhaps I shouldn't have made these comments, Mr. Chairman, I am sorry.

Mr. WALGREN. No, that's——

Mr. SKEEN. Well, I, for one, Doctor, appreciate the comment because I think it is that kind of straightforward approach—maybe scientists should be concerned about what it takes to administer these programs if we are going to have any programs at all, and I think it is also time for the United States to say that our participation is something that ought to prove worthy of the kind of contribution that we make. Whether it benefits us directly is—or on a nationalistic interest—it still is of some interest to us in these worldwide organizations that we are patsied, and so I do appreciate your response and I appreciate the response that Dr. Baker made earlier about some of the problems that we have had and if they

are still running a program where they can't even figure out a more efficient way to get communications handled over there since 1946, we are in big trouble.

So I once again appreciate both of the commentaries that were made. I think they were honestly done and honestly approached and I appreciate it very much. It gives me a better insight in what the problem is.

Thank you very much, Mr. Chairman.

Mr. WALGREN. Thank you, Mr. Skeen.

Dr. Nierenberg, I understand in your testimony, you indicated that there certainly are a number of alternatives open to us. Do you—do you give weight to the argument of Dr. Baker that the other vehicles that are available are—are so small that they would be overwhelmed by a program of the size that we are presently conducting through Unesco?

Mr. NIERENBERG. No. I think Unesco is often overwhelmed for reasons you have heard, but I have to agree with Dr. Baker, they do vary. Remember, my response was a generalization. You know, we are talking about several dozen programs—well, perhaps 20 programs—and I think the one he described is the one that probably is the most difficult to transfer to other organizations. It is probably the most interdisciplinary single program the way it is, the way it is organized, and it is difficult to see how that program, you know, would be transferrable to another organization.

I think the examples you gave are quite correct. I wouldn't be surprised that the World Health Organization, which is very excellent, the WHO is an excellent outfit, couldn't take the whole thing, in other words, expand where it had to and take over that program, as he pointed out himself.

So it probably represents the one extreme of the generalization that I was talking about. I mean, you know, it is a sweep and nothing comes easy in this life, especially when you have to cover 20 different things.

For instance, I said the oceanography and the climate part of the program, I think, would be the easiest thing in the world to transfer. I think there is no problem there and then you go all the way over to his extreme—the one he has described—and that would be very difficult.

I—as far as the size of the organization or the capabilities, you know the Unesco is so divided down into small projects that you probably have the same difficulty in the administration there as you would in other organizations.

Mr. WALGREN. Do you have any personal exposure to the loss of effectiveness of scientific dollars administered through Unesco in your own area?

Mr. NIERENBERG. No, we—we—don't—in oceanography. Not really because there isn't that much that goes in. You see, that is the peculiar nature—my earlier remarks were very cryptic. They were deliberate, not to take too much of the committee's time, but you see, we are involved internationally in the same sense, many, many ways.

Oceanography is naturally international. It is an observational science, but in the rubric of the discussion that we are having now, you have the IOC and you have SCOR. There are some other orga-

nizations, too, but those are the ones that are close to Unesco. Well, neither of those are really Unesco organizations, you see, so it—I am not avoiding your answer; we are simply not involved.

You see SCOR is part of ICSU. ICSU gets some passthrough money and the IOC is—I don't know how to describe it exactly. I have it all written out here, but it is sort of a Unesco protegee, but membership, as I said, in IOC is not contingent on membership in Unesco at all. It operates independently of Unesco in that sense.

So, no, we are not affected by oceanography nor climatology, simply not affected by Unesco. The only argument in favor of Unesco in this regard- -I mean—I should say in favor, but the only argument showing some value to Unesco in this regard is a very general one in that access, you see, to operating in other countries' waters or airspace or to their data and so on, is a most important factor in all observational sciences, and to the extent that Unesco, which is a universal organization, can help in this regard, it does have distinct value with or without money.

Mr. WALGREN. I see, so you would note the value of the access to data from other countries through the network of Unesco, as opposed to——

Mr. NIERENBERG. As an example, you know, I have mentioned—gosh, I can't find it now—the national oceanographic data centers. Those are strictly national things. They are run by nations; as far as I know, they are paid by the individual nations and they are very important, these data exchanges. Just like they would be for meteorology.

Unesco plays a role—or the IOC, I should—here I go again. The IOC, not Unesco, plays a very important role in coordinating the work of these organizations, as an example, although I think the standardization of the data—I would have to be corrected on this, I do get confused—is done by a SCOR. It is very important to standardize the data, its format and everything else so it is transferrable.

I think that is done by SCOR rather than by the IOC, as an example, although I am not too certain.

Mr. WALGREN. Could you conceive of any backlash against the United States on the part of these nations that might be participating in the IOC if we, in their view, abandon an effort that they value through Unesco?

Mr. NIERENBERG. I don't personally, but I certainly agree, Mr. Chairman, in the notes I have taken and the interviews I have made with very responsible, concerned people about all of this and from my background, there is an expression of concern among serious observers, participants, that that could happen.

I, myself, don't have that, but that does exist, and it should be a matter of record.

Mr. WALGREN. Well, thank you very much for coming. We appreciate your time particularly and know that you have a schedule that is difficult to keep and the committee appreciates your help.

Mr. NIERENBERG. Thank you very much, Mr. Chairman.

Mr. WALGREN. The last witness, Dr. Thomas Galvin, who is the dean of the school of library and information science at the University of Pittsburgh. Dr. Galvin is a member of the U.S. National

Commission for Unesco and has chaired the international relations committee for the American Library Association.

Welcome to the committee, Dr. Galvin. We appreciate your being here and please know that your written remarks and anything that you would like to submit will be made part of the record automatically and please feel free to summarize or highlight or direct the committee's attention in this part of the record to the points you would like to make in whatever way you feel is most effective.

STATEMENT OF THOMAS J. GALVIN, DEAN, SCHOOL OF LIBRARY AND INFORMATION SCIENCE, UNIVERSITY OF PITTSBURGH, PITTSBURGH, PA, MEMBER, U.S. NATIONAL COMMISSION FOR UNESCO, CHAIR, INTERNATIONAL RELATIONS COMMITTEE FOR THE AMERICAN LIBRARY ASSOCIATION

Mr. GALVIN. Thank you, Mr. Chairman.

I do appreciate this opportunity to testify today and I speak here in my capacity as the chair of the international relations committee of the American Library Association.

In January, 1984, the American Library Association responded to the announcement of the intention of the United States to withdraw from Unesco. A copy of the American Library Association's resolution on this subject, which urges that the United States preserve the positive benefits of continued membership in Unesco is appended to my written statement and I would like to, if I may, accept your invitation, Mr. Chairman, to take just a few minutes to summarize some of the central elements in my written statement, rather than take the subcommittee's time to present that fully in oral testimony.

Mr. WALGREN. We appreciate it.

Mr. GALVIN. I am here today because librarians and other information professionals believe that scientists must have prompt, full and easy access to all forms of scientific and technical data and information. I need not point out to these two subcommittees, because you are very well aware that science is cumulative. The work of the individual scientist builds on the work of his or her colleagues in the discipline. Without ready access to the published and unpublished results of ongoing research being done by other scientists, U.S. science simply cannot progress.

Science, as I said, is cumulative and the members of this subcommittee are also aware that modern science is international. In that respect, I would like to cite Dr. Joseph Caponio, who is the Director of the National Technical Information Service in the Department of Commerce, the leading source of research reports in science and engineering worldwide, who reported recently that between 75 and 80 percent of all of the current research and development activity worldwide is now being done outside the United States.

I would like to make one further point, and that is that the computer and modern electronic telecommunications have revolutionized worldwide patterns of scientific communication. Print is still an important medium of communication among scientists, but in many disciplines, print has been largely replaced today by the electronic exchange of digitized data across national boundaries.

So my point, Mr. Chairman, is that the U.S. scientific community needs to be very sensitive to policies that govern the flow of electronic data between the nations of the world.

Throughout its 38-year history, Unesco has worked to improve access to all forms of information, especially access to scientific information. Because there has been so much recent concern about and so much criticism of Unesco's programs in the information and communications areas, I think it is also important to take note of Unesco's many major positive accomplishments in the information field.

Among these, I would include the Universal Copyright Convention, which protects the rights of authors and publishers, and which also facilitates the flow of technical information across national boundaries. I would include as well the Beirut, Florence, and Nairobi agreements. These, by eliminating import duties on a wide variety of published materials, make it easier for American scientists and also easier for the libraries that seek to serve and support the U.S. scientific community, make it easier for them to have access to foreign technical publications.

Incidentally, those agreements are also very significant to the American publishing industry. Foreign sales of U.S. scientific, technical, and professional books alone in 1982 amount to over $118 million.

The UNISIST and the Unesco general information programs, which have been well managed, have made tremendous progress in strengthening scientific communication throughout the world.

These, Mr. Chairman, are just a few examples of Unesco's positive accomplishments in the information field, accomplishments that I believe on balance greatly outweigh the negative impact of some of the recent rhetoric on communications issues that has caused us so much concern with respect to Unesco.

In arriving at a balanced assessment of Unesco, I think this record of positive achievement merits your thoughtful consideration. It was for this reason that, as a member of the U.S. National Commission for Unesco, I joined last December with the overwhelming majority of my fellow commissioners in urging the Department of State not to recommend U.S. withdrawal from Unesco.

In making that judgment, I recognize that there are major problems with Unesco that do have to be resolved, and they should be resolved in ways that are consistent with U.S. values and U.S. interests. But I submit, Mr. Chairman, that one does not often solve a problem by walking away from it.

In my judgment, we simply cannot abandon the Unesco forum without jeopardizing our own future access to vital scientific and technical information. The United States must, for example, continue to influence international copyright policy. I do not know of any viable alternative to multilateral negotiation or continued—and continued participation in the international copyright—intergovernmental copyright committee alone is simply not enough to safeguard our interests.

Further, I think we must make certain by our continued presence that Unesco does not adopt programs or international standards that could jeopardize future American access to essential international computerized data banks. United States withdrawal

from Unesco could, for example, lead to the adoption of norms and protocols for transborder electronic data flow, norms and protocols which the United States has no voice in formulating, and which could jeopardize important American scientific and commercial interests.

One final point as an educator, and one that I must make, I do want to stress the importance of Unesco sponsorship of students from other countries. Over 300 students from other countries were supported last year alone by Unesco in U.S. universities. Among the more than 20 Unesco-sponsored Fellows at the University of Pittsburgh this year, is a doctoral student from Morocco in my own school, the school of library and information science, whose research promises to influence the whole pattern of training for information scientists throughout the North African region. These Unesco programs form permanent linkages between scientists and researchers here and those in other countries, linkages that are invaluable.

These are among the reasons that 2 months ago, the American Library Association urged that the Department of State initiate negotiations with Unesco to resolve our differences and urged that those negotations begin immediately. To date, there is no visible sign that any negotiating process has been initiated by the Department of State.

The stakes are enormously important to the U.S. research community, and time is running out.

Thank you, Mr. Chairman.

[The biographical sketch and the prepared statement of Mr. Galvin follows:]

University of Pittsburgh

SCHOOL OF LIBRARY AND INFORMATION SCIENCE
Office of the Dean

THOMAS J. GALVIN

Thomas J. Galvin has been Dean of the School of Library and Information Science at the University of Pittsburgh since 1974.

During his tenure as Dean at Pittsburgh, enrollment in the School of Library and Information Science has grown from 324 to 710 students. Between 1974 and 1984, financial support of the School by the University has increased from $775,000 to a current level of $2,220,000. Since 1974, ten new degree and certificate programs have been established, making SLIS the largest and most diversified school in its field in North America.

Before joining the Pittsburgh faculty, Dean Galvin was Associate Director and Professor in the Graduate School of Library and Information Science at Simmons College in Boston, where he held faculty and administrative appointments from 1962 through 1974. He was Assistant Director of Libraries at Simmons from 1959 to 1962; Chief Librarian of the Abbot Public Library, Marblehead, Massachusetts from 1956 to 1959; and Reference Librarian at Boston University, College of General Education from 1954 to 1956.

Dean Galvin holds the baccalaureate degree with distinction in English from Columbia University, the Master of Science in Library Science from Simmons College, and the degree of Doctor of Philosophy from Case Western Reserve University. He is a member of Phi Beta Kappa and Beta Phi Mu.

In 1972, Dr. Galvin received the Isadore Gilbert Mudge Citation, presented by the Reference and Adult Services Division of the American Library Association. In 1978, he received the Alumni Achievement Award of the Graduate School of Library and Information Science, Simmons College. In 1979, he was named a Distinguished Alumnus of the School of Library Science, Case Western Reserve University.

Dean Galvin is the author or editor of seventeen books. The most recent are Priorities For Academic Libraries (#39 in the Jossey-Bass "New Directions for Higher Education" series), co-edited with Beverly P. Lynch and Information Technology: Critical Choices For Library Decision-Makers, co-edited with Allen Kent. Both were published in 1982.

Earlier books include Excellence in School Media Programs (1980); The Structure and Governance of Library Networks (1979), named the Outstanding Information Science Book of the year by the American Society for Information Science; The On-Line Revolution in Libraries (1978); Library Resource Sharing (1977); The Case Method in Library Education and In-Service Training (1973); Current Problems in Reference Service (1971); and Problems in Reference Service (1965), translated and

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published in Japanese by the Japan Library Association in 1970. Current Problems in Reference Service was the inaugural title in the nine- volume Problem-Centered Approaches to Librarianship series, of which Dr. Galvin was general editor. A regular contributor to professional journals, he is the author of more than 150 published articles, research papers and reviews on various aspects of library and information science.

Dr. Galvin was elected President of the 39,000-member American Library Association in 1979-80. Previous elective offices in that Association include the Presidency of its Library Education Division and three terms as a member of the ALA Council. He is past Chair of ALA's Wilson Indexes and Reference and Subscription Books Review Committees. At the state level, he served three terms as Treasurer of the Massachusetts Library Association. He was a member of the Pennsylvania State Advisory Council for Title IV of the Elementary and Secondary Education Act from 1975 through 1979.

Currently, Dr. Galvin is Chair of the American Library Association's International Relations Committee and Vice Chair of its Commission on Freedom and Equality of Access to Information. He represents ALA on the 1985 IFLA Conference Organizing Committee.

Dr. Galvin was a delegate-at-large to the 1979 White House Conference on Library and Information Services. He was a member of the Public-Private Sector Task Force and the Blue Ribbon Task Force on Satellite Data Archiving of the National Commission on Libraries and Information Science. He serves on The National Advisory Board for the Center For the Book at the Library of Congress. He has appeared on several occasions as an expert witness before committees of the United States Congress.

In 1980, Dr. Galvin was appointed by the Secretary of State to the United States National Commission for UNESCO. During his term, he has served for three years as an elected member of the Commission's Executive Committee and as member and Chair of its Nominating Committee.

Current special appointments include membership on the Visiting Committees of the Matthew A. Baxter School of Information and Library Science, Case Western Reserve University and the School of Library Science, Texas Woman's University. He has served on accrediting teams on behalf of the American Library Association and the Middle States Association of Colleges and Secondary Schools. He is a former Trustee of the Thayer Public Library, Braintree, Massachusetts.

Active at the international level, Dr. Galvin delivered a keynote address at the 1983 General Conference of the International Federation of Library Associations in Munich. He was one of five U.S. experts participating in the 1982 World Congress on Books in London at the invitation of the Director General of UNESCO.

Since 1977, Dean Galvin has been U.S. Principal Investigator for a multi-year national library and information service development project co-sponsored by the Ministry of Culture of Spain and supported by the Spanish-North American Joint

Committee for Educational and Cultural Cooperation. From 1976 through 1978, he was External Examiner in the Department of Library Studies, University of Ibadan, Nigeria. He has served on the Fulbright-Hays Selection Panel of the Council for the International Exchange of Scholars.

Dr. Galvin has been a consultant to a variety of international, national and local organizations, government agencies, colleges and universities, publishers, public and special libraries. Among his current and recent consultant assignments are evaluations of library services at New York University, Brooklyn College of the City University of New York, and Buena Vista College, Iowa; curriculum and program development at King Abdulaziz University, Department of Library Science, Saudi Arabia, the Graduate Library School of the University of Rhode Island, Rutgers University School of Communications, Information and Library Studies, and Millersville (PA) State College; evaluation of the Illinois State Library Interlibrary Cooperation Consultant Program. He serves as editorial advisor to Encyclopaedia Britannica, Thorndike-Barnhardt dictionaries, Pierian Press, Neal-Schuman Publishers and Marcel Dekker, Inc. He is a member of the editorial boards of The Reference Librarian, and Ask!

Dr. Galvin's areas of teaching and research interest include education for the library and information professions, international library development, library management, reference and information services, library networking, information and public policy.

Dr. Galvin is a member of the American Library Association, the Special Libraries Association, the American Society for Information Science, the Association for Library and Information Science Education, Friends of Libraries-USA, the Freedom to Read Foundation, Pennsylvania Citizens for Better Libraries, the Pennsylvania Library Association, and the Pennsylvania School Librarians Association.

Dean Galvin is listed in Who's Who in America, Who's Who in the East, Contemporary Authors, and Who's Who in Library and Information Services.

Revised 12/83

Statement of
Thomas J. Galvin
Dean, School of Library and Information Science
University of Pittsburgh
Before the
House Committee on Science and Technology
Subcommittee on Science, Research and Technology
and
Subcommittee on Natural Resources, Agriculture Research
and Environment
on
Impact of Proposed U.S. Withdrawal from UNESCO on
U.S. Scientific and Technological Cooperative Efforts
March 15, 1984

Mr. Chairman and members of the Subcommittees. My name is Thomas Galvin. I thank you for this opportunity to testify today in my capacity as Chair of the International Relations Committee of the American Library Association and as a member of the United States National Commission for UNESCO.

The American Library Association, founded in 1876, is the oldest and largest national library association in the world. It is the only non-governmental organization at the national level representing all types of library and information services. Almost 40,000 member libraries, librarians and information specialists, library trustees, educators and communicators share the common mission of promoting and improving library services and libraries.

The American Library Association is committed to encouraging the unrestricted flow of library materials and of all forms of information in both print and electronic media throughout the world. Library and information professionals share that commitment with both the U.S. and the international

scientific communities. Science is cumulative. The work of individual scientists builds on the work of colleagues in the same discipline throughout the world. Dr. Joseph Caponio, Director of the National Technical Information Service in the Department of Commerce, emphasized the international dimension of scientific research in a January 13, 1984 report to the American Library Association's Commission on Freedom and Equality of Access to Information. Dr. Caponio said:

> The single most important issue with regard to scientific and technical research is the inability of U.S. scientists to utilize foreign technology because of language problems. United States R & D represents only twenty to twenty-five percent of R & D world-wide.

Scientists and librarians agree that in order for both basic and applied research to flourish, U.S. scientists must have full, prompt and ready access to both the published and the unpublished research results of their counterparts, not only in the United States but throughout the world. Today, scientists rely increasingly on electronic access to the results of ongoing research outside the United States through shared international bibliographic data banks. The computer and modern telecommunications have revolutionized patterns of scientific communication in many disciplines. While books and journals are still important sources of scientific information for the research community, print has been augmented and, in some disciplines, largely replaced by digitized data and information.

It is this concern for the free flow of information across national boundaries that has led the American Library Association to support UNESCO's science information programs since the founding of that organization in 1946. We are proud that the only American ever to serve as Director-General of UNESCO

was a member of our profession, the late Luther Evans, tenth Librarian of Congress. Over its thirty-eight year history, UNESCO has promoted a broad range of important, effective programs to enhance access to information worldwide. It has created a workable multilateral copyright structure through the Universal Copyright Convention. It has taken leadership in persuading many nations to relax import duty barriers to books and other educational materials, as well as some scientific instruments, through the Beirut, Florence and Nairobi Agreements. Senator Robert Dole, in remarks appearing in the Congressional Record for December 14, 1983, stated that "the provisions of the Nairobi Protocol benefit particularly worthy groups, not only in this country, but in all countries that become signatories to it." Through its UNISIST and General Information Programs, UNESCO has systematically pursued the goals of Universal Bibliographic Control (UBC) and Universal Availability of Publications (UAP). The announced objective of the UAP program is

> The widest possible availability of published material... to intending users, wherever and whenever they need it, as an essential element in economic, social, technological, educational and personal development.
> (Maurice Line and Stephen Vickers. Universal Availability of Publications (UAP). Munich: K.G. Saur, 1983. p. 19)

Time will not permit me to do justice to the many real past and current positive achievements of UNESCO in creating a world climate that supports, facilitates and encourages the flow of essential scientific and technical data across national boundaries. I do want to make the Subcommittee members aware, however, that even in the information sector, where of late UNESCO has properly been the object of both deep concern and some well-deserved harsh criticism from the U.S. and other Western nations, there is also a substantial record of

positive accomplishment that is of critical importance to the U.S. information and scientific communities--as well as to the publishing industry--a record in which the U.S. can justifiably take genuine pride as a UNESCO member state.

Recognizing that UNESCO is both a vital mechanism for world science information flow and a critical arena for the formulation of policies, norms, standards and international agreements in the information area, the American Library Association on January 11, 1984 expressed its concern at the prospect of United States withdrawal from UNESCO. A copy of that resolution is appended to my statement. In it, the Association calls on the Secretary of State and the Director General of UNESCO to initiate discussions that will lead to resolution of outstanding differences before December 31, 1984. Today we remain deeply troubled that no process yet appears to have been initiated by the State Department to pursue such negotiations. And time is running out!

There are serious problems with UNESCO that need to be resolved. As a member of the U.S. National Commission for UNESCO, I am keenly aware of many of those problems. But while there is conflict at the political level, the fact remains that, even in the information sector, which has been the most controversial, the Department of State in a report to the Congress on February 24, 1983, certified that UNESCO "has debated but has not implemented policies or procedures of an anti-free press nature." What UNESCO has done in the information field, at the operational level, is to develop and implement successful, non-politicized, practical programs of cooperation and development that are vital to U.S. interests and for which no workable alternatives exist.

Experience makes it abundantly clear, for example, that international copyright cannot be effectively negotiated on a bilateral basis. At risk here is future access by the U.S. library, scientific and technical communities to

important scientific books and journals imported from overseas and access to international scientific data bases of growing significance to the research community. At risk as well is the future protection in other countries of works copyrighted in the United States by American authors. In 1982, U.S. book exports in the scientific and technical and professional category alone, represented a dollar value of over $118,000,000. UNESCO is a critical forum for the debates that will determine future international copyright policy. We dare not absent ourselves from that forum.

The risks are even greater with respect to policies that will increasingly govern the flow of scientific and technical data in electronic form across national boundaries. Just as future scientific progress in the United States requires continued access to both primary data and research results compiled in other countries, so too, important economic interests are threatened if the U.S. computer and information industries are restricted in their access to foreign markets. Again it seems to me essential that the U.S. voice continue to be heard in UNESCO debates that, under the rubric of a "New World Information Order," might, without our presence, result in adoption of norms and standards incompatible with U.S. computer and telecommunications hardware and software. Our continued effective participation, for example, in the UNESCO General Information Program, which is generally acknowledged to have been highly significant in aiding less developed nations to acquire and use modern electronic information technology, is essential in this respect.

As an educator, I must also emphasize the important contribution made by those UNESCO programs that enable students from less developed nations to pursue advanced study and research in American universities. At the University of Pittsburgh last year alone, twenty students from Third World

countries were supported by UNESCO funds in advanced studies in many disciplines. Among them is a doctoral student in my own School from Morocco, whose research promises to have a major impact on the future training of information scientists for the entire North African region. These UNESCO fellowship programs, which supported more than three hundred international students in U.S. universities last year, create long-term relationships that are vital in linking U.S. researchers to their counterparts overseas.

For all of these reasons, as the American Library Association's representative to the U.S. National Commission for UNESCO, I was among the overwhelming majority of Commissioners who voted last December to advise the Department of State not to recommend that the U.S. withdraw from UNESCO. I urge the Congress to recognize fully how much of importance to the American scientific, library, publishing and information communities will be threatened if our differences with UNESCO are not speedily resolved. To implement our announced intention to withdraw from UNESCO would isolate the U.S. scientific community, would result in a decline in the leadership position the U.S. now holds in international science and would encourage further politicization of UNESCO in ways potentially very damaging to U.S. commercial, academic and research interests.

CONTINUED UNITED STATES MEMBERSHIP IN UNESCO

WHEREAS, the United States was a founding member of the United Nations Educational, Scientific and Cultural Organization; and

WHEREAS, UNESCO's programs are vital to the international flow of publications and information, to Universal Bibliographical Control, to international copyright, to the worldwide promotion of books, libraries, publishing and literacy; and

WHEREAS, the American Library Association has been a longstanding member of the United States National Commission for UNESCO; and

WHEREAS, ALA has a strong and continuing concern for the issues of press freedoms which are addressed in the UNESCO forum; and

WHEREAS, the United States National Commission for UNESCO, on the basis of an extensive study of the views of the American Library Association and other U.S. non-governmental organizations qualified to evaluate the UNESCO program, affirmed on December 16, 1983, that continued United States membership in UNESCO is in the national interest;

THEREFORE BE IT RESOLVED, that the American Library Association deeply regrets the decision of the President of the United States, on recommendation of the Secretary of State, to issue notice of the intention of the United States to withdraw from membership in UNESCO effective December 31, 1984; and

BE IT FURTHER RESOLVED, that the American Library Association calls upon the Secretary of State and the Director-General of UNESCO to initiate prompt, serious and productive negotiations leading to timely and satisfactory resolution of differences in order to preserve the many positive benefits of continuing U.S. participation in UNESCO; and

BE IT FURTHER RESOLVED, that copies of this resolution be transmitted to the President of the United States, the Secretary of State and the Director-General of UNESCO and other appropriate bodies.

Adopted by the Council of the
American Library Association
Washington, D. C.
January 11, 1984
(Council Document #21)

TUESDAY, JANUARY 3, 1984

Pittsburgh Post-Gazette

Letters to the editor

UNESCO withdrawal is a bad idea

It is ironic that William Safire's commendation of the U.S. withdrawal from the United Nations Educational, Scientific and Cultural Organizational (UNESCO) should have been illustrated with the seal of the U.S. National Commission for UNESCO ("A Timely Move Out of UNESCO," Dec. 27).

At its Dec. 16 meeting, the commission (comprised of 100 Americans appointed by the secretary of State and serving without compensation as an advisory body to the government on UNESCO affairs) voted by an overwhelming margin that "continued U.S. membership in UNESCO is in the national interest."

The commission reached this conclusion after an extensive factual study in which the views of leading scholarly, scientific, trade and public-service organizations of UNESCO and its programs were systematically gathered. Groups as diverse as the League of Women Voters of the United States, the National Wildlife Federation and the National Academy of Sciences, while recognizing UNESCO's major shortcomings in some critical areas, were unanimous in concluding that what is in the national interest is not a diminution, but a quantitative and qualitative expansion of the U.S. presence in UNESCO.

The American Newspaper Publishers Association has stated that "U.S. withdrawal from UNESCO almost certainly would encourage greater activity by totalitarian governments which seek to restrict information and press freedom both internationally and domestically."

To withdraw from this vital international forum deprives the American scientific and academic communities of contacts essential to the successful conduct of research and scholarship. To suggest that satisfactory, cost-effective alternatives to UNESCO can be created in such economically important areas as international copyright is patently absurd. And to abandon the UNESCO arena to the avowed enemies of free access to information and ideas is to betray our national commitment to freedom and equality for all humankind.

THOMAS J. GALVIN
Member, U.S. National Commission for UNESCO
Mt. Lebanon

Mr. WALGREN. Thank you very much, Dr. Galvin, for that direct statement. I think that the weight that those factors deserve rings clear.

Could I recognize Mr. Brown for any thoughts, comments?

Mr. BROWN. Thank you, Mr. Chairman.

Dr. Galvin, I think that your testimony is of particular significance because the arena which seems to—the arena policy which seems to have caused this country the most difficulty and probably was a precipitating factor in the decision to possibly withdraw from Unesco was not the cooperative scientific programs or probably even the high ratio of overhead costs, but was the involvement of Unesco in the New World information order debate and the whole question of policy involved in that debate, and you have spoken directly to that issue.

I am very deeply concerned about this for a number of reasons, including our own economic role in world markets involving information products and another committee of this Congress, the Government Operations Committee, has issued a number of reports criticizing the U.S. lack of an integrated policy for dealing in this area, and in fact, legislation seeking to remedy this through the creation of high-level, Cabinet-level task force has actually moved forward in the Congress, although it is not yet passed.

And in that line, concerning ourselves with the economic impact of this withdrawal, I wonder if you could comment as to, for example, what would be the position of the United States in world markets for things such as software, data bases, development of computer networks and other things of that sort if we saw international standards being developed which favored foreign information industries?

Mr. GALVIN. Well, that is, as you well know, Mr. Brown, because you have been instrumental in bringing the size of that sector of the economy to the attention of your colleagues in the Congress, that is a very large and rapidly growing market. The most recent data that come to mind are a couple of years old, but the world information industry, in terms of computers and related technologies, has been characterized as a $60 billion annual industry, of which the United States market share is $49 billion. That is a very substantial area, indeed.

And I think that you are well aware that other nations are eager to claim a larger share of that marketplace; that we face increasingly intense competition from other nations in the hardware and software fields; and that, indeed, not to have a strong presence in any arena where normative standards are being formulated that could result in U.S. information products being incompatible with standards in place elsewhere in the world would, I think, constitute a grave risk, not only, by the way, to important commercial interests, but to the interests of worldwide science and scholarship because it is simply essential that information networks in the several nations of the world that are becoming increasingly important in research be interconnectable with information networks and data bases here in our own country.

So I think there is a—I think there are very important considerations, both commercial and scholarly that are placed at risk and it

is for this reason that I feel very strongly that we must have a strong continuing presence in those forums.

Mr. BROWN. Dr. Galvin, Dr. Nierenberg, for whom I have very high respect, indicated, and I think quite correctly, that for a number of the different scientific programs which are now under the sponsorship of Unesco, there were alternative institutional arrangements.

Now, I suspect there may be some also in the information field; I am not at all acquainted with the details of this, but is—do you feel that there are international institutional arrangements for standard-setting and other types of cooperation in the information field which could adequately replace the role which Unesco is playing here?

Mr. GALVIN. I would doubt that there are at the present time, Mr. Brown. If so, I am not aware of them. I think that it is difficult to identify another forum that has quite the breadth of Unesco in these discussions.

Mr. BROWN. You mentioned that we are talking here in terms of international commerce of a possible $60-billion-a-year market. Would you indicate whether or not you feel that this country and its industry involved in this field could conceivably face losses that might be the equivalent of our $50 million participation in Unesco?

Mr. GALVIN. I suspect quite easily so, yes, sir.

Mr. BROWN. Getting or to the field of——

Mr. WALGREN. Would the gentleman yield just to clarify the numbers? We are talking about $50 million——

Mr. GALVIN. Yes.

Mr. WALGREN [continuing]. As compared to a market of——

Mr. BROWN. $60 billion.

Mr. GALVIN. $60 billion. Estimated world market in the information——

Mr. BROWN. Which the United States currently has the predominant share——

Mr. GALVIN. Yes.

Mr. BROWN [continuing]. Because of its, of course, its technical superiority, as well as its participation in the standard-setting and other things which open this market up to U.S. providers, U.S. producers.

Mr. WALGREN. And the French and other computer producers are not exactly ready to leave Unesco, is that right?

Mr. BROWN. I don't want to appear too biased in my view, but I suspect the French, the Japanese, the Germans and a number of others would leap into the breach here.

On the question of—of the U.S. library and archival community in general, is there any other forum in which this community could continue to actively participate in international activities in the absence of a Unesco framework?

Mr. GALVIN. Well, there are two other organizations that come immediately to mind, both of which, by the way, receive substantial financial support from Unesco, and they are the International Federation of Library Associations and Institutions and the International Federation for Documentation. And Unesco, through its general information program, provides support to very important international information development activities of both of those

organizations, and there is substantial U.S. participation in both of those organizations.

However, the—I would stress, the key role of the Unesco general information program in coordinating these multinational and international ventures. The United States has a very effective national committee, the U.S. national committee for the Unesco general information program that is very closely linked to the development of priorities in the general information program and it is, of course, that linkage that would be lost if we were no longer members of Unesco.

Mr. BROWN. Dr. Galvin, moving on to another area briefly, you have commented already, the vast difficulties with regard to developing the—or maintaining the international copyright structure if we had to revert to bilateral negotiations and I assume this would apply to certain other areas. One that comes to my mind is the going debate over trans-border data flows and the impact that this would have on the U.S. international networking systems in the event that an international legal framework was developed which would put undue burdens in this area.

The impact of such burdens would fall primarily on the United States at this time; would it not?

Mr. GALVIN. I would say so, yes, sir.

Mr. BROWN. You have also mentioned that despite the large amount of rhetoric flowing out of the U.N. dealing with this subject and others under this general rubric of a new world international order that that seems to be directed more at getting our attention rather than any specific actions.

If I may coin a phrase, it is more bark than bite at this point, so that we really haven't been seriously injured by the debate; we have just been worried a little bit that they are getting out of our control.

Mr. GALVIN. Well, I think there are very legitimate concerns because while the objective of achieving worldwide equality of access to information is a very noble objective that I think all reasonable people would support, some of the means proposed by the developing nations for achieving a different balance in the distribution of information resources are means that would not be acceptable to the United States and that are perceived as constituting potentially serious challenges to American principles of press freedom, for example.

But I would point out for the record that under the Beard amendment, the Department of State was obliged to certify to the Congress in February 1983 that Unesco was not currently engaged in any programs that were contrary to American principles of press freedom or a threat to those principles, and the Department of State did indeed so certify just 1 year ago. To my knowledge, Unesco has not initiated any new programs or activities in this area during the intervening period of time.

So I think it is the problem of trying to balance on the one hand a very disturbing outpouring of rhetoric which is of great and legitimate concern against a series of programs at the operational level like copyright that have, I think, proven themselves to be valuable and useful and that is always a difficult kind of balance to achieve, I think.

Mr. BROWN. Well, just as a sort of an editorial comment, Dr. Galvin, it is--from the beginning of this country, we have always perhaps deluded ourselves with the idea that we had a message for the rest of the world and that that message needed to be communicated through all of the systems of information, including electronic means and books and libraries and publishing and other things of that sort. It would seem to me that when we inhibit our opportunity to participate in the major international institutional arrangements for enhancing that free flow of information, we are hurting our own ability to influence the rest of the world.

You may comment on that if you wish. It happens to be my personal bias.

Mr. GALVIN. Well, that is a perception that I find very much like my own.

Mr. BROWN. Thank you. I have no further questions, Mr. Chairman.

Mr. WALGREN. Thank you, Mr. Brown.

I wanted to at least ask you to elaborate on the idea that an international copyright can't really be effectively negotiated in a bilateral basis, or on a bilateral basis. Can you just expand on that along with the thought that American publishers do look for protection of their——

Mr. GALVIN. Indeed.

Mr. WALGREN [continuing]. Copyright through an international system and there is the possibility that if we are not participating in the international copyright, that countries around the world could simply ruin the value of American publications by—by not respecting copyright.

Mr. GALVIN. Well, that is a—that is a very serious problem because U.S. publications, particularly in scientific and technical areas, are in very high demand, especially in the less-developed countries. Piracy and unauthorized reproduction of U.S. copyrighted works is a growing problem worldwide and Unesco and the Universal Copyright Convention have been an extraordinarily important mechanism for our representing the views of the U.S. publishing community and the legitimate rights of U.S. authors and proprietors.

I think that experience has indicated, and indeed, I note that the Department of State in the Unesco policy review, on page 38, the Department of State characterizes bilateral arrangements in the copyright field as impractical. It is simply not feasible to deal on a one-by-one basis with the 161 nations of the world that are members of Unesco, attempting to negotiate and then administer a different kind of agreement with each and that is why it is—experience would indicate that the multilateral approach is the only practical one.

I might say the same is true with respect to the Florence, Beirut, and Nairobi protocols and the lowering of tariff barriers to the import of educational materials. Once again, the importance of a consistent pattern among all of the signatories to those protocols, as opposed to attempting to deal with a bewildering array of individualized arrangements on a country-by-country basis.

I would say, also, that I think there is some genuine value in having the moral force of Unesco to support United States—the ef-

forts of the United States and the other Western countries to control unauthorized reproduction of copyrighted materials for profit in other countries.

I would not minimize the importance of Unesco's identifying itself with that activity. I think it is helpful.

Mr. WALGREN. To the degree that you have been involved in this, do you feel that—that the judgments that have been made by the Department of State about the value or the lack of loss in leaving Unesco—did they try to take into account what essentially is not the—the direct loss, but the reverse side of the coin in a very indirect fashion, but a very potentially damaging and possible fashion?

Mr. GALVIN. Well, it is my personal view that the weight of the evidence gathered by the Department of State, as I have seen it reflected in the February 1984 policy review, would lead me to quite a different conclusion than it led the Department of State. I realize we—that the State Department approaches these matters from a somewhat different point of view.

Mr. WALGREN. Would they have attempted to specifically deal with—with factors such as the—such as increasing violation of copyright and even computer loss on an international basis if standards were written against United States' equipment?

Mr. GALVIN. I think the policy review does sketch out rather faithfully the economic implications in the area of copyright. In the case of trans-border data flow, I think that is an area that has not been adequately addressed in the State Department review.

Mr. WALGREN. I see. Well, I cut you off from an answer you were sort of midflight from or to, did you want to finish that thought?

Mr. GALVIN. No; I don't think you did.

Mr. WALGREN. I—I am sorry; I thought I interrupted you.

Mr. GALVIN. No.

Mr. WALGREN. Well, we appreciate very much your testimony and—and should let it stand without lots of other congressional comments because it stands very powerfully on its own—on the corner of its own four pages—or four corners—on the strength of the four corners of the page. So thank you very much for such direct testimony. I think it is very helpful to the—to the committee.

Mr. GALVIN. Thank you, Mr. Chairman.

Mr. WALGREN. I want to introduce in the record—for the record, statements from the American Association for the Advancement of Science and testimony on behalf of Dr. A.K. Solomon, professor of biophysics at Harvard Medical Student—School. These presentations will be included in the record without objection.

[The statements of the American Association for the Advancement of Science and of Dr. Solomon follow:]

American Association
for the Advancement of Science

1776 MASSACHUSETTS AVENUE, NW, WASHINGTON, D. C., 20036

Phone: 467-4400 (Area Code 202) Cable Address: Advancesci, Washington, D. C.

March 13, 1984

The Honorable James H. Scheuer
Chairman, Subcommittee on Natural Resources, Agriculture Research and Environment
U.S. House of Representatives
Washington, D.C. 20515

Dear Jim:

The Honorable Doug Walgren
Chairman, Subcommittee on Science, Research and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Doug:

I have received the press release announcing your joint hearing on the potential impact on both international scientific cooperation and American science of a U.S. withdrawal from UNESCO. We have several comments to offer, although this letter by no means constitutes a full AAAS examination of the withdrawal impact issue.

We have considered the matter in quite a general way, as you can see from the attached correspondence. The AAAS was asked by The United States National Commission for UNESCO to contribute views to a reassessment of U.S. participation in UNESCO. In our reply we noted areas of our own international involvement in science and technology topics and efforts relevant to UNESCO. Additionally:

(1) AAAS supported the conduct of the policy review of UNESCO participation by the U.S. and urged the interagency task force to make specific recommendations to strengthen the U.S. voice in UNESCO affairs.

(2) I expressed my own view that the U.S. should continue and enhance its active participation in UNESCO affairs.

In reviewing your witness list I note the presence of only one Administration witness. I would hope that Secretary Hewell will be in a position to respond to questions about how the impact of a U.S. withdrawal has been assessed by other federal agencies having international science and technology programs (e.g. NSF, the Department of Agriculture, NASA, etc.). More specifically, it would seem to be quite important that a well-defined plan be available as to what agencies would undertake efforts currently accomplished through U.S. participation in UNESCO. Such a plan should embrace both program and budget considerations.

The Science and Technology Committee is to be commended for focusing attention on this very important element of international science and technology -- both in terms of the international community's interests and those of the United States.

If we may be of further assistance, please do let me know.

Sincerely,

Bill

William D. Carey
Executive Officer

American Association
for the Advancement of Science

1776 MASSACHUSETTS AVENUE, NW. WASHINGTON, D. C., 20036

Phone: 467-4400 (Area Code 202) Cable Address: Advancesci, Washington, D. C.

October 18, 1983

Dr. James B. Holderman
Chairman
The United States National
Commission for UNESCO
Department of State
1015 20th Street, N.W., Suite 410
Washington, D.C. 20036

Dear Dr. Holderman:

Thank you for your letter of August 25, 1983 concerning an assessment of U.S. participation in UNESCO. In response to your request, I should like to comment on AAAS relations with UNESCO and our perceptions of the importance of the work UNESCO is doing.

AAAS is deeply concerned with international affairs in the Western Hemisphere and throughout the world. One AAAS committee, that on Scientific Freedom and Responsibility, concerns itself with the status and working environment of scientists worldwide. It seeks to maintain freedom of travel, open correspondence, easy exchange of scientific data and publications, and the other requisites for the conduct of scientific research. Ties to UNESCO projects and mechanisms are especially important to this area of concern.

The Association conducts many symposia and conferences on science and international affairs including those focussing on concerns over global environmental issues and global climate change as impacted by human activities. Access to UNESCO channels and people is of great value in these initiatives, which apply scholarly and scientific advances to consideration of policy issues. The educational goals of UNESCO are also closely parallel to those of the AAAS programs in public understanding of science, and affiliation with UNESCO enhances coordinate efforts by the two organizations.

Other areas of AAAS activities relevant to UNESCO activities include:

1. The Consortium of Affiliates for International Programs;

2. Interciencia, a federation involving representatives of nine Western Hemisphere nations that publishes a journal and arranges conferences and symposia for all kinds of mutual scientific concerns of the Western Hemisphere;

3. United Nations conferences. The Association has been active in many UN conferences in recent years involving such areas as science and technology for development, Pacific Basin studies, remote satellite sensing, and international arid lands research among others.

AAAS supports the conduct of the policy review of UNESCO participation by the U.S. and urges the interagency task force to make specific recommendations to strengthen the U.S. voice in UNESCO affairs.

My own view is that the U.S. should continue and enhance its active participation in UNESCO affairs. I should also mention that Walter Orr Roberts, former President of AAAS and the Association's representative to UNESCO, is in accordance with the views expressed in this letter.

Please let me know if I can be of further assistance.

Sincerely yours,

William D. Carey
Executive Officer

Established by Act of Congress July 30, 1946

THE UNITED STATES NATIONAL COMMISSION FOR UNESCO

Department of State, 1015 20th Street, N. W., Suite 410
Washington, D. C. 20036

August 25, 1983

AUG 29 1983

Mr. William D. Carey
Executive Officer
American Association for the
Advancement of Science (AAAS)
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Dear Mr. Carey:

As part of an in-depth review, the State Department has asked the U.S. National Commission for UNESCO to contribute to a reassessment of U.S. participation in UNESCO. Copies of Assistant Secretary Newell's request and our interim reply are enclosed for your information.

To ensure that the State Department has at its disposal the views of those organizations most concerned with UNESCO, it would be helpful if you could let us have your organization's considered comments on the issues to be addressed in the Administration's review. In particular, where possible, we should like a formal statement setting out the benefits from U.S. Participation in UNESCO enjoyed by your organization, as well as the problems and difficulties encountered in dealing with UNESCO. Your suggestions on how to improve the relationship will, of course, be welcome.

The National Commission, a statutory advisory body appointed by the Secretary of State, is conducting a separate study on its own future, so where possible we shall try to take into account your comments on UNESCO in our reorganization of the Commission.

If your organization is represented on the Commission, a copy of this letter is being sent to your representative. I am sure he or she will be glad to help in preparing your reply. We are writing direct to your headquarters, however, to facilitate a considered reply from your organization as a whole. Each Commissioner is being invited separately to submit personal comments.

Your reply will be welcome as soon as possible and, in any case, no later than October 15, 1983.

Your cooperation is much appreciated.

Sincerely,

James B. Holderman

James B. Holderman
Chairman

TESTIMONY FOR THE JOINT HEARING OF THE SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY AND THE SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURAL RESEARCH AND ENVIRONMENT
March 15, 1984

given by Dr. A. K. Solomon, Professor Emeritus of Biophysics
Harvard Medical School

I should like to express my thanks for the opportunity to testify before the joint hearing and to express to these distinguished members of Congress my views about United States participation in UNESCO science. My interest in UNESCO stems from service as a member of the United States delegation to the General Conference and long involvement with the pursuit of American scientific policies in UNESCO. I have also had many years' experience working directly for UNESCO on projects of interest to the United States.

Let me start with some data taken from the report which the State Department made to Congress on February 24, 1983 (as requested in Public Law 97-241, sections 108 and 109). This report points out that the education and science sectors account for 67% of UNESCO's program operations budget while communications and the social sciences account for only 8%. The executive summary of the report states explicitly that the "highly controversial activities relate to a minority of UNESCO programs". Thus the 8% tail has been wagging the 67% dog. I want to address primarily the 28% of the total program budget which is spent on science, though my comments will have some relevance to the 39% devoted to education. In dollars, for the 1981-83 triennium, $69 million was spent on science programs from the regular assessed program funds. In addition to the regular funds, $132 million was obtained from extrabudgetary sources including UNDP

and UNEP together with direct support for selected UNESCO projects provided by the governments of member states.

Another quotation from the same State Dept. report can be used to put the relationship in more concrete terms. "UNESCO contributions which benefit the United States.....amount to about 40% of the U.S. contribution". In other words, the economic benefit to the United States is five times greater than the 8% cost of the controversial programs. In preparation for its decision on withdrawal from UNESCO, the State Dept. requested the National Science Foundation to report on the state of UNESCO science. The Foundation solicited opinions from a broad group of Federal agencies, as well as the National Academy of Science and concluded that the scientific benefits to the United States from UNESCO participation outweighed the costs. The National Science Foundation conclusion, which is supported by the figures above, indicates that United States withdrawal from UNESCO is not in the best interests of the scientific community.

There has been general concern about administrative costs of UNESCO and I share this concern. In order to make an accurate assessment of the problem, I have obtained the following figures from the secretariat of the science sector. The science budget for the 1984-85 biennium is $56.6 million. This is divided into $28.5 million in direct program expenditures, $8.4 million for staff costs in the field away from Paris and $19.7 million or 35% for headquarters costs including administration and staff travel. If the extrabudgetary funding bears the same proportion (191%) to the budgetary funding in 1984-85 as it did in 1981-83, there would be an additional $108 million from these sources, of which the secretariat estimates that 90% will be spent directly in the field, thus bringing the total program

money to $125 million. Since the headquarters staff bears some responsibility for soliciting the extrabudgetary funds and expending them, the 35% figure is an overestimate of headquarters administrative costs.

Important international aspects of interdisciplinary science can only be carried out with multilateral support both from governmental and non-governmental agencies. In fields such as oceanography and the geological sciences, UNESCO is the agency responsible for the multilateral governmental interactions, which often serve United States interests by giving us access to data from nations with which the United States government does not enjoy close diplomatic relations. The major non-governmental international scientific partner in these projects is the International Council of Scientific Unions (ICSU) which is an association of International Unions in sciences such as mathematics, physics, chemistry, biology, the geological sciences and a number of other basic and applied sciences. The national adhering bodies to ICSU are not governments, but rather, as in the United States, National Academies of Science. Other scientists will testify this afternoon about UNESCO support of international programs in biology and oceanography, but I should like to add some budgetary information. About 57% of the UNESCO direct program expenses in the science sector are devoted to the geosciences, hydrology, the ecosciences and the marine sciences. The major programs supported by these funds are: Man and the Biosphere (MAB), the International Hydrological Program (IHP), the Intergovernmental Oceanographic Commission (IOC) and the International Geophysical Correlation Program (IGCP); the amount to be expended for the 1984-85 biennium in these areas is about $14 million. The UNESCO secretariat estimates that this UNESCO expenditure will generate approximately $500 million in direct

expenditures by member states for their own activities in these programs and that approximately 20,000 scientists from all over the world will participate.

ICSU, which makes a large contribution to the essential non-governmental component of all these programs receives about 30% of its financial support from UNESCO. I am concerned about the possible loss of 25% of the ICSU subvention from UNESCO although I hope that some alternative arrangements for direct United States support of ICSU can be made. I am also concerned about the imbalance in the ICSU-UNESCO partnership after the formal United States presence is removed from UNESCO. ICSU has direct access to the most distinguished scientists, world-wide, and UNESCO has relations with the governments of both the developed and the developing nations. It is the coupling of these two approaches, governmental and non-governmental, to the solution of international, interdisciplinary scientific and technological problems that has led to the advances in the major programs discussed above. UNESCO's access to governments is particularly important in nations in which the scientific infrastructure is still so underdeveloped that there is no natural access through the scientist-to-scientist route. In these instances, the ICSU-UNESCO partnership provides a unique and effective mechanism to bring the talents of leading scientists to bear on the problems of the developing nations.

The example of this cooperation with which I am most familiar is the program for the ICSU-UNESCO Distinguished Fellowships in Science. These fellowships are awarded to young scientists of exceptional promise who have already carried out distinguished post-doctoral studies in their own countries. The fellowships are tenable for one year in a developed country and

require assurances from the fellow's home institution that a job will be waiting on his return and a promise from the fellow to return home after his fellowship is complete. The fellowships are awarded by an international committee of scientists (of which I am chairman), chosen jointly by ICSU and UNESCO. In the first year of operation we had more than 200 applications from more than 20 countries for the two places we could award. The committee hopes that we will be able to award as many as 10 fellowships a year and believes that the graduates will form an elite body of scientists in the less developed countries destined to hold positions of leadership in their respective countries. The advantage to the United States is that most of these scientists will carry out their studies in Western nations and will return home with a personal knowledge of life in a democratic society. Direct exposure to American values is a lasting benefit to the holders of those fellowships who study in the United States. One of the two fellowships already awarded is held by a Zambian biologist who is studying the Zambian tick at the University of Texas. We have hopes that the results of his research will be effective in controlling the Zambian tick which makes great inroads on agricultural productivity. He is writing a book which has been accepted for publication by the University of Texas press. On a broader scale, UNESCO awards 300 or more fellowships, primarily to younger scientists at an earlier stage of their development. The State Dept. report points out that well over half of these fellows are sent to the United States, France and the United Kingdom. In 1982, the report points out, 183 fellows came to the United States and only 19 went to the Soviet Union.

Another example of an effective UNESCO program is afforded by training courses, which last usually for a few weeks and are held in either deve-

loped or less developed countries. Typically, the staff comes from the developed nations, primarily from the Western nations and Scandinavia, and the students come from the developing countries. In 1982, there were 2637 students in training courses in the basic sciences, of which about 63% come from the developing nations. UNESCO sponsors some 80 of these courses each year, generally giving each one a modest annual subvention of about $10,000. As a rule the host country bears the bulk of the costs, usually more than 90%. As in the fellowship program, the importance of these courses to the United States lies in the interactions between the student and his mentors which lead to broad promulgation of Western values and establishment of close personal relations between United States scientists and their colleagues in the developing world.

United States Oversight of UNESCO Science Program

In 1984, the UNESCO science budget should run at a $28.8 million rate, of which the United States contribution is $7.2 million. It is my understanding that the oversight of this expenditure lies primarily in the hands of a junior officer in the I/O bureau of the State Dept. The officer has not had scientific training and can only devote half-time to science, since he is also responsible for education. In Paris, the U. S. Permanent Delegation to UNESCO includes the Science Attache, Dr. Manfred Cziesla, who has been seconded from the National Science Foundation which supports the post. Dr. Cziesla is a trained scientist and is the only individual with scientific training who exercises immediate oversight of the $7.2 million annual expenditure. Within the United States, the State Dept. can call upon the U. S. National Commission for UNESCO for advice. The Commission has several scientists among its members, including a representative of the National

Academy of Science, but it meets infrequently and can not provide day-to-day consultation. In previous years there has been a National Academy of Science subcommittee on "Science in UNESCO" which was funded by the National Science Foundation and provided advice to the State Dept. and the U. S. National Commission when requested. However, funding has now been terminated and the subcommittee has been disbanded.

At the General Conference of UNESCO, which meets biennially, the United States is represented by its delegation, appointed by the President, with the advice of the Senate. For over a decade, there has been a tradition that United States scientific interests were represented by a scientist member of the delegation, appointed from the private sector. The delegations of other member states also contain scientific representatives and much of the scientific business of the Conference is transacted, formally and informally, between these representatives. In 1983, there was no scientist on the United States delegation, so that the senior scientist representing the United States was the Science Attache of the Permanent Mission.

How Can United States Participation in UNESCO Be Strengthened?

In the executive summary of the U. S. UNESCO policy review, the State Dept. points out that it had been directed by the Administration to "reassert American leadership in multilateral affairs", and that failure with UNESCO in this respect was a contributory reason for the decision to withdraw from UNESCO. It is desirable to examine, from a scientific viewpoint, the reasons for this failure and then to put forward specific suggestions for strengthening the United States position, should the

decision to withdraw be altered.

Some years ago, when I was a member of the U. S. National Commission for UNESCO, the Soviet National Commission invited us to send a delegation to Moscow to discuss mutual interests. I was the scientific member of the four man delegation that went to Moscow. In Moscow, the Soviet delegation was led by the second in command of their Foreign Office. When we discussed education, the Minister of Education met with us and other high level officers participated in other discussions. It is widely perceived that the USSR influence in the education sector of UNESCO is greater than the American influence. Our experience in Moscow leads me to believe that the explanation is that the Soviet government cares and is prepared to work at the problem. We are fortunate that the United States is still strong in science, but we cannot expect to maintain our position in UNESCO unless the State Dept. (or some other designated agency) is prepared to mount an effort commensurate with the United States position in world science.

In the course of our discussion in Moscow it became apparent that the Soviets were as concerned about the increases in the UNESCO budget as we were. We suggested that one means of controlling the expenditures in the science sector was to institute a peer review system, similar to that used by the National Institutes of Health and the NSF. Scientific research proposals are evaluated by a jury of one's peers and financial support is determined on the basis of excellence, as evaluated by this jury. It would be more difficult to apply such a system to an international organization such as UNESCO since the jury would be chosen internationally from representative scientists and criteria in different countries might vary. Furthe-

reore, UNESCO projects are different from scientific research projects and standards would be difficult to determine. Nonetheless, it seems that the obstacles could be overcome; the Soviet delegation was generally in favor of such a mechanism.

About two years ago, UNESCO established an Advisory Committee on Science, Technology and Society, an international committee of scientists to advise the UNESCO secretariat on scientific matters. The committee was initially chaired by Dr. Abdus Salam, the Pakistani Nobel laureate who is Director of the International Center for Theoretical Physics at Trieste. Other members include Dr. M. G. K. Menon, scientific advisor to the Government of India, Sir John Kendrew, also a Nobel laureate, who is the President of ICSU and Academician Yuri Ovchinnikov, Vice President of the USSR Academy of Science. I was one of two United States representatives and put forward again the suggestion of peer review. There was firm support from many members of the committee, including Dr. Ovchinnikov, and the proposal has now been incorporated in the 1984 UNESCO budget, albeit in a modest form. It should be strengthened and put into effect as soon as feasible. Such a proposal has benefits for UNESCO since it would provide an independent appraisal that, if favorable, would provide convincing evidence about the quality of a project and, if unfavorable, would provide an internationally acceptable rationale for discontinuance. In this case, as in many others, American leadership is welcome and a broad consensus about sensible scientific proposals can often be attained.

The State Dept.'s Executive Summary of U. S. Policy Review speaks to the problem of UNESCO's hiring of Americans. United States representation in the science sector is reasonable, in view of the fact that we had been

promised an additional high level position (D2) once a suitable candidate could be found. In my view, the problem of recruitment in the science sector rests more on the American inability to mount a suitable recruitment program rather than on UNESCO reluctance to provide sufficient posts. Science in the United States is intensely competitive and no first class scientist of my acquaintance would be prepared to leave his research to accept a two year appointment at UNESCO. In general, preservation of a tenured position would not pose a problem since two year leaves can often be granted. But two years away from active research would provide a handicap that would be virtually impossible to overcome. If the candidate held a non-tenured position, his possibilities of reappointment would be vanishingly small. This is not the case in the Soviet Union where the government can send a scientist or a scientific administrator to UNESCO with the promise of a secure position on his return to the Soviet Union.

The problem is exacerbated in the United States because the State Dept., which is charged with recruitment, has no apparatus for the purpose. The State Dept. does not appoint search committees for these positions, as universities do, nor does it, as far as I know, advertise the positions in scientific journals. Furthermore the job description does not match that of a research scientist but is related more to scientific administration and science policy. One way to find suitable young people and to enlist their interest in international science would be to create positions as apprentices, or aides, in UNESCO, similar to training positions in the U. S. Congress, on which this suggestion is modeled.

During the course of Mr. M'Bow's visit to Harvard and MIT in July '83

there were exploratory discussions along these lines with the Harvard School of Education. Although no detailed scheme evolved, the conversations proceeded along the following lines. UNESCO would provide junior level positions in the sectors of science and education, some to be funded by UNESCO and some from American sources. These positions would be tenable for one year and would be designed to attract graduate students in education, science policy and science administration, either during their graduate training or for a post-doctoral year. The School of Education would appoint two high level committees, one in education and one in science, who would oversee the recruitment process and be responsible for the final selection. The cost of the program would be relatively small since it would only require support for the operations of the committee and a relatively small number of junior level positions. It would have the great advantage, after a few years of operation, of providing a cadre of experienced United States young men and women suitable for jobs in these fields, not only in UNESCO but also in other agencies with interests in international science.

One of the unexpected byproducts of the United States withdrawal from UNESCO is a new feeling that is abroad in Paris. I understand that there is a revived esprit de corps and that members of the secretariat are working harder and more effectively in the discharge of their duties. Also there is a new awareness in the United States about UNESCO. I daresay there has been more informed discussion about UNESCO in the past three months than in the prior three years. In Paris, a group of Western nations, led by the Dutch, have formed a committee to press for important reforms within UNESCO and I trust that the United States will share in this endeavor. The State Dept. is deploying increased staff to examine alternate methods of providing the UNESCO services, and has also begun to strengthen its relations with non-

bers of the scientific community. Thus, whatever happens, it is clear that the role of science in international affairs has been more clearly recognized in the United States. It is my hope that these currents, and the initiative that Congressman Scheuer has taken in arranging for an independent review of the fiscal and management activities of UNESCO, will come together and lead to a renewal of United States participation, deepened and broadened by the exercise we are now going through.

MR. WALGREN. Well, that concludes the hearing for today, and I want to again thank the witnesses for such enlightening testimony.

[Whereupon, at 5 p.m., the subcommittees were adjourned, to reconvene subject to the call of the Chair.]

APPENDIX

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Science and Technology Programs in UNESCO:
A Description of the Programs and Preliminary Analysis of the Policy Implications of U.S. Withdrawal For Science

Prepared at the Request of the
Subcommittee on Science, Research and Technology
House Committee on Science and Technology

Genevieve J. Knezo
Specialist in Science and Technology
Science Policy Research Division

and

Michael E. Davey
Analyst in Science and Technology
Science Policy Research Division
March 12, 1984

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EXECUTIVE SUMMARY

This report is limited in scope because it focuses exclusively on the reactions of the scientific community to the U.S. decision to withdraw from UNESCO. In addition, the information used to compile this report consists primarily of the public reactions of scientists to the decision. The report is not meant to be a comprehensive analysis of the Administration's decision to withdraw, nor of the significant political issues which prompted this decision. The Administration announced it will withdraw from UNESCO because the agency has politicized most activities; it is anti-Western; it has exhibited unrestrained budgetary expansion; and it has serious management problems.

Although many governmental and nongovernmental scientists have criticized UNESCO's science programs, those that have taken reactive positions in print generally oppose the Administration's decision to withdraw on stated grounds that U.S. science and international cooperative science will suffer. Cited as especially worthwhile are four UNESCO international cooperative science projects. These are: the International Hydrological Program, the Man in the Biosphere Program, the International Geological Correlation Program, and the International Oceanographic Commission. These programs, which are focused on issues of global importance, promote and support the exchange of scientists and information, as well as joint research among most of the world's countries. UNESCO also conducts a host of activities designed to develop science infrastructure in the developing countries. The following have been variously cited as benefits of UNESCO's science activities to the United States:

- access to databases necessary for science and useful to intelligence agencies;
- access to research sites and personnel in other countries with which we maintain only limited diplomatic relations;
- development of international research and science networks and communications links;
- development of markets for U.S. technology;
- provision of "seed capital" for new international science organizations;
- cost-sharing of global projects; and
- improvement of the quality of basic research.

The President said that the United States might remain in UNESCO if the agency overcame perceived shortcomings. These include: depoliticizing its deliberations, improving management, and meeting "zero growth" budget targets. A U.S. decision to reconsider its withdrawal notice does not hinge on improvements in UNESCO's science activities alone, but rather on broader issues of UNESCO and U.N. politics. Generally, the Department of State has acknowledged the quality and benefits of UNESCO science. However, suggestions have also been made for ways to improve UNESCO's science programs, perhaps to forestall withdrawal. Many scientists agree that the problems the Administration identified affect UNESCO science. But, at the same time, some have charged that short-sighted U.S. Government attitudes and actions regarding UNESCO have contributed to its problems in the science area. They have suggested such additional reforms as:

- requiring the U.S. Government to clarify its goals for UNESCO and to decide whether both basic research and science for development can be served;
- giving more high-level attention to the development of policy for UNESCO in the White House science office, and increasing funding for mechanisms in the Department of State, the U.S. Permanent Delegation to UNESCO, the National Academy of Sciences (NAS), and the National Science Foundation (NSF) to monitor UNESCO science. Others have suggested shifting the locus of policy guidance from the State Department to the NSF or NAS;
- improving the quality of UNESCO's staff, including its American personnel; and
- undertaking efforts to improve dissemination of information about UNESCO.

Most of the scientists who have reacted publicly to the decision to withdraw do not agree with the State Department's views that the United States could conduct effective international science by expanding its bilateral science agreements or increasing support for the International Council of Scientific Unions (ICSU) or other multilateral agencies. The Congress may wish to consider taking action to guide improvements in U.S. policy for UNESCO science activities or to design acceptable programmatic alternatives to UNESCO's programs. Governmental and nongovernmental scientists have convened groups to recommend and monitor improvements in UNESCO and to advise the Government on options for future U.S. international science activities, should the United States withdraw from UNESCO.

I. INTRODUCTION

This report is limited in scope because it focuses exclusively on the published reactions of the scientific community to the U.S. decision to withdraw from UNESCO. In addition, the information used to compile this report consists primarily of the reactions of scientists who have taken public positions in reaction to the decision. The report does not purport to be a survey of scientific opinion, nor is it meant to be a comprehensive analysis of the Administration's decision to withdraw, nor of the significant political issues which prompted this decision. The report describes: the rationale for the U.S. decision to withdraw from UNESCO; UNESCO's science and technology activities; scientists' reactions to and criticisms of the decision to withdraw; the policy implications of withdrawal for science; and issues related to developing program alternatives to UNESCO's science activities.

A. THE DECISION TO WITHDRAW

Secretary of State George Schultz notified Amadou-Mahtar M'Bow, Director-general of the United Nations Educational, Cultural, and Scientific Organization (UNESCO) on December 29, 1983 that the United States would withdraw from UNESCO on December 31, 1984. 1/ Secretary Schultz charged in the letter that UNESCO had

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1/ Letter, George P. Shultz, Secretary of State to Hon. Amadou-Mathar M'Bow, Dec. 29, 1983. See also: Gwertzman, Bernard. U.S., In Quitting UNESCO, Affirms Backing for U.N. New York Times, Dec. 30, 1983. p. A1, A4; Pincus, Walter. U.S. Officially Gives Notice of Intention to Quit UNESCO. Washington Post, Dec. 29, 1983. p. A14; Scully, Malcolm G. U.S. Will Leave UNESCO; Cites Anti-West Bias. The Chronicle of Higher Education, v. 27, Jan. 4, 1981. p. 1, 27; and Scully, Malcolm G. U.S. Decision to Quit UNESCO Seen Reversible. The Chronicle of Higher Education. v. 27, Jan. 11, 1984. p. 1, 30. For an example of press coverage concurrence with the U.S. decision, see: Little Education, Science or Culture. New York Times, Dec. 16, 1983: editorial. See also a forthcoming CRS issue brief, entitled "UNESCO-U.S. Withdrawal In Perspective," by Lois McHugh.

extraneously politicized virtually every subject it deals with; exhibited hostility toward the basic institutions of a free society, especially a free market and a free press; and demonstrated unrestrained budgetary expansion.

The Department of State had reviewed six U.N. agencies and concluded that they did not meet the Administration's standards, but that five of them subsequently had made significant changes in response to the President's demands: the Food and Agricultural Organization; the International Telecommunications Union; the International Atomic Energy Agency; the U.N. Environmental Program; and the International Labor Organization. The sixth agency, UNESCO, did not attempt to make the policy shifts sought by the Administration. 2/ In the case of UNESCO, the Administration objected especially to the politicalization of its deliberations; anti-Israel actions; growing Soviet dominated disarmament activism; anti-Western tendencies, as reflected in UNESCO's moves to deny press freedom and individual rights; excessive overhead costs; managerial ineptitude; nepotism in personnel practices, and the lack of an attempt to seek "zero-growth" in budgets. 3/

The UNESCO constitution requires member states to give a one-year notice before withdrawing. The Department of State said that the withdrawal decision was firm. 4/ However, the President said he would reconsider it if UNESCO made clear progress in rectifying the problems affecting the

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2/ Greenberger, Robert. U.S. Announces Plan to Leave UNESCO in 1984. Wall Street Journal, Dec. 30, 1983. p. 4.

3/ See, for additional details: U.S. Department of State. U.S./UNESCO Policy Review, Feb. 27, 1984, 65 p.; and Testimony of Ambassador Jean Broward Shevlin Gerard, U.S. Permanent Representative to UNESCO before the Subcommittee on Natural Resources, Agricultural Research and Environment of the House Committee on Science and Technology, Mar. 8, 1984, 8 p.

4/ Newell, Gregory J. Why the United States is Withdrawing From UNESCO. Statement by Assistant Secretary for International Organization Affairs, at 3 P.M. Press Briefing, Dec. 29, 1983.

agency. 5/ He asked Secretary Shultz to create a high-level ". . . panel consisting of senior representatives of the academic community, the media and the corporate world to advise us over the next year," and to monitor progress. 6/ The Administration also said it did not object to participating in other programs which met the "original goals of UNESCO" and that it would "continue to pursue international cooperation in education, science, culture, and communications by shifting our contribution to other appropriate bilateral, multilateral or private institutions." 7/

The withdrawal from UNESCO science activities may be viewed, for the most part, as a casualty of the larger political decision and the inadequacies in other areas of UNESCO since, according to the State Department, "UNESCO science activities generally satisfy U.S. objectives and priorities." 8/ A U.S. decision to reconsider its withdrawal notice does not hinge only on improvements in UNESCO's science activities, but rather on broader issues of UNESCO AND U.N. politics.

5/ Memorandum for the Hon. George P. Shultz from Robert C. McFarlane, Dec. 23, 1983, Subject: Withdrawal from UNESCO.

6/ Ibid.

7/ Memo, McFarlane to Shultz, Dec. 23, 1983, op. cit.

8/ U.S. Department of State. U.S./UNESCO Policy Review. Feb. 27, 1984. p. 12.

II. BRIEF DESCRIPTION OF UNESCO

UNESCO was created as a specialized United Nations (U.N.) agency in 1946. It was founded "for the purpose of advancing, through the education, scientific, and cultural relations of the peoples of the world, the objectives of international peace and the common welfare of mankind." 9/ Public Law 79-565, a joint resolution, authorized the President to join UNESCO and to establish the U.S. National Commission for UNESCO. UNESCO promotes scholarly collaboration in education, science, and culture. It holds conferences, conducts expert studies, promotes the exchange of personnel, generates publications, and adopts non-binding guidelines regarding conservation, education, and culture, and attempts to advise governments on programs to develop education, science, and culture. The Commission advises the U.S. Government on programs and policy for UNESCO; it is composed of academics, industrialists, media people, and other public and private individuals interested in UNESCO. (The State Department has virtually abolished non-governmental activities of the Commission since it withheld fiscal year 1984 funding for most of the Commission's activities, forcing the Commission to terminate its nongovernmental staff and close its offices outside of the State Department. The Commission's secretariat now consists exclusively of State Department staff.) 10/

9/ Preamble to the Constitution of UNESCO.

10/ Interviews: Johnathan Davidson, University of South Carolina, and Jeanne Berghaust, Department of State, Feb. 1984.

UNESCO is headquartered in Paris. One-hundred and sixty-one nation-states are members; its senior staff size is about 900; its 1984-1985 budget is $374 million. When it was founded it had 28 member nations and its budget was $6.9 million. The United States contributes 25 percent of the UNESCO budget, down from a high of 44 percent in 1946. The last annual U.S. contribution (for fiscal year 1984) was $50.7 million. The next largest contributor to UNESCO is the Soviet Union, at 12.5 percent. UNESCO also receives funds from other U.N. agencies to implement programs in their areas. One major source of income is the World Bank. UNESCO also receives an allocation from the U.N. to administer the U.N. Development Program (UNDP). It also administers what is known as "Other Programs," which consist, for example, of technical assistance projects funded on a voluntary basis by individual member states.

III. UNESCO'S PROGRAMS

UNESCO supports fourteen major programs, as well as various administrative and program support activities. The fourteen major programs are organized into four major sectors:

- Education
- Social Sciences and their Application
- Culture and Communication
- Natural Sciences and their Application to Development

Twenty-eight percent of the budget is devoted to programs in the natural sciences, those of particular relevance to this paper. The total amounts budgeted for these programs for the calendar years 1981-83 are as follows: 11/

	Dollars in Millions	Percent
Education	280	39
Natural Sciences and Their Application to Development	202	28
Social Sciences and Their Application	42	6
Culture and Communications	82	11
Copyright, Information Systems & Services, Statistics	29	4
Program Support Services	47	7
Co-operation for Development	34	5
Total	716	

11/ Finkelstein, Lawrence S. Conference Document: Is the Past Prologue? In U.S. Dept. of State. A Critical Assessment of U.S. Participation in UNESCO. Special Meeting of the U.S. National Commission for UNESCO. June 1-3, 1982. Washington, U.S. Govt. Print. Off., 1983. p. 36.

UNESCO's three non-science programs deal with education, 12/ social sciences and their application, 13/ and culture and communications. 14/

12/ Education is the largest sectoral program supported by UNESCO. The dominant program theme, one which always has had strong American support, is education for development. UNESCO has pioneered world wide literacy campaigns and plays an important role in developing educational methods, and educational planning.

13/ One of UNESCO's primary goals in this sector is to develop social science infrastructures in developing countries. Activities consist of research, exchange, and publications about the normative themes emerging from general conferences. U.S. initiatives in this sector focus on human rights education and engendering respect for women across a fairly broad spectrum of roles and problems.

14/ The cultural program was begun in 1973. According to Lawrence Finkelstein its objective was to "speed the change in the role of culture, from the activity of an elite in society to a necessity claimed by all." For UNESCO this involves the training of specialists in cultural development, arts administration, and the organization of cultural events. UNESCO's best known work in this area, is its relatively successful work to preserve great monuments.

In the area of communications much of the program involves studying the role and effect of communication on development, attempts to develop international communications policies, training and other forms of assistance. Many of the programs in this sector focus on developing a New World Information Order (NWIO), which has been a source of controversy for the United States. (Finkelstein, Lawrence. S., op. cit., p. 39.)

IV. NATURAL SCIENCES PROGRAMS

The Department of State reported that the UNESCO science and technology budget, for 1981 to 1983, was about $202 million, of which $69 million were regular assessed program funds and $132 million were from extra-budgetary sources. This is about 28 percent of the total budget for program operations and services. 15/ UNESCO is the single largest intergovernmental organization (IGO) recipient of U.S. Federal funds for international science. 16/

The Natural Sciences Sector of UNESCO, one of eight UNESCO sectors, administers UNESCO's major science activities. These activities, which will be described next, are in Major Programs VI, IX, and X, of UNESCO's Program Budget for 1984-1985. Another science-related program, Major Program VII, Information Systems and Access to Knowledge, addresses science and technology information systems and technologies.

The programs administered by UNESCO's Natural Sciences sector are very broad, spanning the gamut from neurobiology to mapping of the ocean floor. UNESCO serves as a facilitator and catalyst for many international sceince programs. UNESCO does not conduct scientific research.

15/ U.S. Dept. of State. Reports to the Congress Requested in Sections 108 and 109 of P.L. 97-241. Typescript, Feb. 24, 1983. p. 15.

16/ Other smaller IGO recipients are: the Science Committee of the North Atlantic Treaty Organization (NATO), the science programs of the Organization for Economic Cooperation and Development (OECD), and the science programs of the European Economic Commission (ECE). (Kovach, Eugene G. U.S. Government Participation in the Science and Technology Programs of Selected Multilateral Organizations. Washington, National Science Foundation, May 1978. p. 10.)

Priorities for scientific activities are developed in cooperation with member states and in consultation with the International Council of Scientific Unions (ICSU), and other nongovernmental organizations. 17/ UNESCO's international cooperative science programs are unique since they permit governments, nongovernmental organizations, and private citizens jointly to probe solutions to global problems. The costs for some participants such as some U.S. Government agencies, are often borne by the participants themselves, not only by UNESCO. UNESCO projects often are interdisciplinary, permitting a broad-based attack on major multinational problems.

The goals of UNESCO's Natural Science programs are:

a. To build on the spirit of international cooperation in science through the exchange of experience, shared data banks. . .and joint planning and execution of regional and international projects;

b. To increase the awareness and understanding of S&T among the public . . . [and] . . . users . . . ; and

c. To assist developing countries in building the capabilities—human and institutional—they require to pursue science and and technology policy. 18/

A. The Sciences and Their Application to Development (Major Program VI)

This program is budgeted at $58.9 million for 1984-1985. Its primary purpose is to increase the scientific and technological capabilities

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17/ ICSU is the chief scientific advisory body to UNESCO. It was formally created in 1931. Today ICSU is comprised of 20 member unions. Working in cooperation with intergovernmental organizations of the U.N. family, such as UNESCO, WHO and others, ICSU's committees and commissions play an important role in coordinating research projects which address global problems. Membership is open to nations which have a minimum critical level of scientific expertise in various scientific areas. Consequently, most of its 72 members are from the more developed countries.

18/ U.S. Dept. of State. Reports to the Congress Requested in Sections 108 and 109 of Public Law 97-241. Feb. 24, 1983. p. 16.

of the developing countries. This program supports research, personnel exchanges, and training in mathematics, experimental and applied physics, physical and organic chemistry, molecular and cell biology, the social sciences and their development as a science, energy, technology and the engineering sciences and informatics. The informatics program is designed to encourage the use of computer technology in helping to solve development problems. All of these programs involve the cooperation of international nongovernmental organizations, including the International Council of Scientific Unions (ICSU), and its unions; the International Foundation for Science; the International Organization for Chemistry Development (IOCD); the International Brain Research Organization; and others. 19/

This program also provides subventions (a contribution of financial support) to ICSU, to a ICSU-UNESCO fellowship program, and to the International Bioscience Network. The National Science Foundation has judged that "UNESCO's most important nonproject effort in the natural sciences is the encouragement of the . . . ICSU and its member Unions . . . . These are highly successful vehicles for international cooperation by the private and academic sectors. UNESCO provides an environment in which the independent and non-political character of ICSU can be protected and respected." 20/

19/ The IOCD was founded in 1981 to involve chemists from Third World Nations in cooperative search of solutions to urgent problems of their countries. Initial funding was provided by UNESCO, enabling the IOCD to sponsor programs with such organizations as the World Health Organization (WHO), the Walter Reed Institute for Medical Research, and the National Institute of Health.

20/ [National Science Foundation.] Natural Sciences in UNESCO: A U.S. Interagency Perspective, typescript, 1983. p. 3.

Another project involves cooperation between institutions in developing countries and the School of Hygiene and Public Health at Johns Hopkins University. It uses biological research to solve such public health problems as the diagnosis and prevention of viral and parasitic illnesses in developing countries.

B. Science, Technology and Society (Major Program IX)

This program, budgeted at $8,989,600 for 1984-1985, encourages the formation of national science and technology policies to meet individual member needs. It also supports the training of scientific journalists and science and technology museum personnel, organizes technical education centers, and awards science prizes.

Two major conferences (one in the Arab states and one in the Caribbean) have been planned to examine science and technology policies and their relation to development. One of the more controversial projects in this program will examine the scientist's role in informing the public about the relationship between scientific research and the arms build-up. UNESCO will allocate $55,700 to the project. These funds will be supplemented by interested international nongovernmental organizations and national associations.

C. The Human Environment And Terrestrial And Marine Resources (Major Program X)

The program on Human Environment and Terrestrial and Marine Resources is budgeted at $49.9 million for the period 1984 to 1985. This program has nine subprograms whose purpose is to promote the rational use and management

of natural resources. 21/ Four special international, interdisciplinary, cooperative programs are managed under the auspices of this program area. They are the International Geological Correlation Program (IGCP), the International Hydrological Program (IHP), the Intergovernmental Oceanographic Commission (IOC), and the Man and the Biosphere Program (MAB). According to UNESCO's Director-general, these programs share the following characteristics:

> a. they are programs requiring international cooperation because of the geographic extension and planetary nature of their problems;
>
> b. they concern both the developing and industrialized countries . . . ;
>
> c. the activities conducted under these programs are agreed on and defined at international levels, but implemented, for the most part by the countries themselves . . . ; and
>
> d. they are characterized by . . . fruitful multilateral and bilateral cooperation 22/

Each has a very different program design as described below.

1. The International Geological Correlation Program

The International Geological Correlation Program (IGCP), was created to advance knowledge of the geological history and structure of the Earth's crust, especially with regard to rational use of mineral and energy resources. The program is budgeted at $547,400 for 1984 to 1985. 23/ This program was

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21/ These focus on: earth sciences, natural hazards, water resources, ocean resources, management of coastal and inland regions, land-use planning, urbanization, the natural heritage (conservation), and environmental education.

22/ United Nations Educational, Scientific and Cultural Organization. M'Bow, Amadou-Mahtar. Introduction to the Draft Programme and Budget 1984-1985. Paris, 1983. p. 54 and 55.

23/ All program budget figures represent Regular Program funds only. UNDP or "Other Programme" funds are usually tentative. The figures do not include staff and indirect costs. Finally, these amounts could change due to fluctuations in the exchange rates.

conceived and is implemented by UNESCO and the non-governmental International Union of Geological Sciences (IUGS), one of the 20 member unions of ICSU.

The IGCP supports 45-50 active projects. One of its major objectives is to examine continental drift and the geography of the once contiguous continents. Other programs relate to: helping developing countries acquire and analyze geological data; assisting developing countries in assessing their mineral and energy resources; studying factors involved in land use planning; collecting and disseminating earth sciences information; and interpreting data acquired through remote sensing techniques. Reportedly, one of the IGCP's most successful projects is an international study of phosphorites (fertilizer) developed by the Australians. About 35 to 40 countries participate in this research aimed at better understanding the development of phosphate deposits, while at the same time, helping less developed countries examine their future fertilizer needs.

The U.S. National Committee for the IGCP oversees U.S. participation in the IGCP. The U.S. Geological Survey (U.S.G.S.), at the request of the State Department, coordinates the activities of the U.S. Committee.

If the United States were to withdraw from UNESCO, we could still maintain our involvement in the IGCP programs through membership in the IUGS. However, the U.S. Government probably would have little influence over program priorities or budgeting.

2. The International Hydrological Program

The International Hydrological Program (IHP), is budgeted at $1,378,000 for 1984 to 1985. It is a successor to the UNESCO-sponsored International Hydrological Decade (IHD), 1965-1974. The IHP coordinates research, development of knowledge and methodology, training, and information in

surveying, conservation, and appropriate use of water resources. The IHP is entering its third phase of activities (1984-1989), which is oriented towards using scientific methods to manage water resources. Phase three will support 75 projects in such fields as: hydrological processes, the influence of man on the hydrological cycle and the development of hydrological information dissemination systems.

IHP's 150 member nations elect a 30-member International Government Council (of which the United States is a member), that establishes the project goals and implementation procedures. The U.S. Geological Survey, at the request of the State Department, has been the coordinating agency for the U.S. Government. The U.S. National Committee for Hydrology, made up of various Government agencies, universities and members from the private sector, formulates policy for U.S. participation. 24/ U.S. interests focus on toxic wastes, acid rain and problems associated with surface water run-off.

Because the IHP is a UNESCO-sponsored program, the United States would not be eligible for membership if we were to withdraw from UNESCO. However, individual U.S. scientists might might be able to continue to obtain data from some of the independent non-governmental organizations affiliated with IHP, such as the International Association of Hydrological Sciences and the International Association of Hydrogeologists.

24/ Government agencies are: the U.S. Geological Survey, the Department of Agriculture, the Corps of Engineers, the National Oceanographic and Atmospheric Administration, the Department of Energy, the Department of State, the Environmental Protection Agency, the National Science Foundation, and the Tennessee Valley Authority. The University Council on Water Resources, represents the university community; private sector groups include the American Society of Civil Engineers, the American Water Resources Association, the National Academy of Sciences, the Geological Society of America, and the American Geophysical Union.

3. The Intergovernmental Oceanographic Commission

UNESCO has budgeted $1,282,200 for the Intergovernmental Oceanographic Commission (IOC) for the period 1984 to 1985. IOC is an autonomous body established within UNESCO in 1960. IOC functions as the coordinating body within the U.N. for marine science and related activities, but its secretariat is located in the UNESCO secretariat. IOC's purpose is to promote international research on the oceans to learn more about ocean resources and processes. Membership in the Commission is open to any state that is a member of any of the major U.N. organizations. Thus the United States may remain a member of the IOC if this Nation withdraws from UNESCO.

The Commission's major program activities are divided into three areas:

a. Ocean sciences, promoting and coordinating of investigations in marine research, marine pollution, the relationship between ocean dynamics and the climate, seafloor mapping and geology marine ecosystems;

b. Ocean services, the organization of sevices to the scientific community and the public; (data exchange,network of oceanographic stations, oceanographic products, e.g., analyses and forecast of oceanic conditions, Tsunami warning system); and

c. Education, training, teaching and mutual assistance in the area of marine sciences.

IOC's International Oceanographic Data Exchange (IODE) is important to the United States. IODE is a global data network that provides the United States with 60 percent of all foreign sources of marine data, 25/ an essential part of the National Oceanographic and Atmospheric Administration's (NOAA), U.S. Oceanographic Data Center resources system, which the United States uses for developing forecasts of long-range weather patterns.

25/ [National Science Foundation.] Natural Sciences in UNESCO, op.cit., p. 2.

The 110-member IOC assembly meets every two years to review its various programs and elect approximately one-quarter of its members to the Executive Council. The Executive Council consists of a Chairman, four Vice chairmen and the remaining delegates elected by the assembly. The United States is a member of the Executive Council which establishes IOC policy and gives final approval to the IOC programs.

U.S. participation in the IOC is coordinated at NOAA on the behalf of the State Department. The U.S. Oceanographic Commission, establishes policy for U.S. participation and consists of members from Government agencies, universities and the private sector. 26/

4. The Man And The Biosphere

The Man and the Biosphere (MAB) program was established in 1970 with goals of finding, through international cooperation, interdisciplinary solutions to the problems of managing natural resources and land development and of assessing man's effects on the biosphere. It is budgeted at $948,700 for the period 1984 to 1985. MAB research programs are divided into 14 areas with over 1,000 field projects implemented by 79 of the 100 countries that have MAB committees. Seven program areas involve particular kinds of geography (e.g. forest, grazing lands, coastal, and estuarine areas). Six program areas focus on systems and processes (e.g. major engineering, demographic changes, and urban ecosystems), and one program involves biosphere reserves

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26/ Besides NOAA, other Government agencies that participate are: the National Science Foundation, the National Aeronautics and Space Administration, the U.S. Navy, and the Environmental Protection Agency.

(land areas especially designated and protected for research, monitoring, and conservation).

The MAB International Coordinating Council (ICC) meets every two years in Paris to confer with the Paris UNESCO staff to coordinate global activities. Dr. Paul Baker, chairman of the U.S. National MAB Committee, is one of the four Vice Chairmen on the ICC.

The U.S. MAB program was established in 1972 by the State Department as part of the U.S. National Commission for UNESCO. The U.S. MAB program has three components. The first involves 135 scientists, university scholars, administrators and private sector members who donate their time to the MAB program. The second component is a Secretariat composed of three government employees from the Department of State and the Forest Service, who administer the program on a part-time basis. The third component is the U.S. National Committee for MAB, which provides overall policy guidance. The U.S. MAB program has three functions. It synthesizes and interprets basic scientific research on ecologically-related problems, such as studies of marginal lands, the tundra, and tropical forest. It acts as a catalyst for cooperation between natural and social scientists. And, it facilitates information exchange between scientists and decisionmakers, both in Government and in the private sector.

One of MAB's most successful programs is the Biosphere Reserve system, land areas protected for research, monitoring, and conservation. The international MAB program has helped to establish 215 biosphere reserves in 58 countries. To date 40 areas have been named in the United States, 27/ including Olympic National Park and the Great Smokey Mountains National Park. If the United States were to leave UNESCO, it would no longer be

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27/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 3.

eligible to participate in the UNESCO MAB program as it is currently operated. 28/ The United States may chose to continue U.S. MAB activities domestically. Questions have been raised about whether the U.S. MAB would be able to use the UNESCO program's name. In addition, the U.S. MAB would probably have to rely on the willingness of other countries to conduct international U.S. MAB activities. 28/

28/ Information about the likely future of U.S. MAB activities came from interviews with State Department officials. Government agencies that have been involved in the MAB program are: the Department of State, the U.S. Forest Service, the Department of Interior, the Agency for International Development, and the National Aeronautics and Space Administration.

V. SELECTED OTHER UNESCO SCIENCE PROGRAMS

Besides these four programs, there are several other UNESCO science programs in which the U.S. Government and the scientific community are involved. If the United States were to withdraw from UNESCO, it would not be eligible to participate on an official basis in any of these programs. However, it appears that U.S. scientists, as private citizens, not official representatives of the U.S. government, could be hired to participate in any of the particular research endeavors of the following programs. 29/

The Natural Hazards Program (NHP), has two subprograms: (1) development of knowledge for better assessment and prediction of natural hazards (earthquakes, floods, landslides, volcanic eruptions), and (2) design of techniques to reduce loss of life and physical damage from hazards. U.S. earth scientists participate in international groups that study earthquake patterns and frequently serve as individual consultants to other countries.

The Engineering Information and Training Program (ENGG), is geared to the needs of the developing countries. It promotes conferences and seminars on engineering issues and helps develop educational materials for engineers in the developing countries. There is some active U.S. participation but the overall benefit to the United States is said to be low. 29a/

The International Brain Research Organization (IBRO) fosters cooperative research in neurosciences. It sponsored its First World Brain Congress in

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29/ Interviews; officials at Dept. of State and U.S. Geological Survey.

29a/ [National Science Foundation.] Natural Resources in UNESCO, op. cit., p. 2.

Switzerland in 1982 and is increasingly active in neuroscience activities of interest to the United States. 30/

The International Center for Theoretical Physics (ICTP) at Trieste, Italy, is the world's only focus for joint cooperative research and training in physics, involving U.S. physicists and their counterparts from LDC, Communist, and industrial countries. In 1984, it will host two international physics conferences, planned to have significant U.S. involvement.

The General Information Program (PGI) aims to increase national capabilities in the mobilization and use of scientific information and assists in international cooperative information exchange. This program keeps the United States abreast of LDC information needs and capabilities. 31/ According to several observers, if the United States withdraws from UNESCO, some foreign buyers in developing countries will not become familiar with U.S. computer technology. Thus U.S. manufacturers will lose computer sales that might have been generated by these programs and foreign markets may be forfeited to French and Japanese suppliers. 32/

The Statistical Division (STAT), provides the United States with the only central source of R and D statistical information for the world's non-OECD countries.

UNESCO also implements a variety of science education programs, many of which use NSF-developed curriculum materials.

30/ U.S./UNESCO Policy Review, op. cit., p. 10.

31/ Idem.

32/ Interviews: Department of State, UNESCO office; National Academy of Sciences personnel, Feb. 1984.

VI. SCIENTISTS' REACTIONS TO THE U.S. DECISION TO WITHDRAW

It is generally acknowledged that UNESCO science activities have strengthened U.S. science and, to some limited extent, have served as a catalyst for major, relatively extended international cooperative scientific projects aimed at solving global problems. One observer pointed out the historical importance of the U.N. to the scientific community when he noted that American and British scientists insisted, when it was created, that the United Nations' responsibilities extend to science since "governments would not accept . . . [the scientists'] . . . preferred alternative of a separate international organization for science." 33/ American scientists and diplomats originated UNESCO's major scientific programs, including the Man and the Biosphere Program; the U.N. Science and Technology Information Program; the International Geological Correlation Program; the International Hydrological Decade and its successor, the International Hydrological Program; and the International Decade of Ocean Exploration, and its successor, the Intergovernmental Oceanographic Commission. 34/

33/ Finkelstein, Conference Document: Is the Past Prologue? op. cit., p. 38.

34/ Interview with a staff member, National Academy of Sciences-National Research Council, Feb. 1984. Also, see the comments of Mr. Arnold Kramish. In A Critical Assessment of U.S. Participation in UNESCO. Special Meeting of the U.S. National Commission for UNESCO, op. cit., p. 14-15.

No one has undertaken an in-depth analysis of the impact of withdrawal on U.S. or international science, but both the governmental and nongovernmental scientific communities have reacted vigorously to the proposed withdrawal. Generally most scientists who have reacted publicly to the withdrawal announcement have disagreed with the U.S. move, even though they agree that UNESCO has serious political and management problems, even in the science sectors. The reactions of governmental scientists and administrators are contained in an interagency analysis of "Natural Sciences in UNESCO," prepared by National Science Foundation (NSF), at the request of the Department of State, based on the submissions of Federal technical agencies, 35/ as part of a broader State Department interagency review. The final version of the Department of State's report did not include all parts of the original NSF report. 36/ It cited many of the positive aspects of UNESCO Science, as in the NSF interagency report. But it omitted many of the details that were in the NSF report of the benefits of UNESCO science to international cooperation and of the negative implications of withdrawal. Also, the NSF interagency report recommended against withdrawal from UNESCO, in contrast to the State Department report.

Nongovernmental scientists' reactions take a variety of forms, such as letters to the editors; articles; the written report of a special National Academy of Sciences review; and written submissions to an inquiry sponsored

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35/ [National Science Foundation.] Natural Sciences in UNESCO: A U.S. Interagency Perspective, Science Foundation], typescript, 1983, 8 p.

36/ U.S. Department of State. U.S./UNESCO Policy Review. Typescript, Feb. 27, 1984, 65 p.

by the U.S. National Commission for UNESCO. 37/ The consensus of these views is that science and technology are probably among UNESCO's most outstanding and non-politicized activities, and, clearly, are of benefit to U.S. science. 38/ Most said U.S. science would suffer if this Nation withdrew and that the United States should retain membership in UNESCO in order to rectify the problems affecting UNESCO as described by the U.S. Government and the scientists themselves. 39/ The problems which specifically affect science will be discussed in the next section of this report. They result, according to many scientific commentators, from mismanagement by both the Department of State and UNESCO, and unclear definition of U.S. goals and expectations for science in UNESCO. Some scientists have suggested reforms to improve UNESCO science activities.

The NSF interagency report to the Department of State contains comprehensive comments regarding the benefits of UNESCO to U.S. science. For instance, it concluded: "The weight of tangible benefits over certain impediments clearly justifies continued U.S. participation in UNESCO. Many of the science projects sponsored by UNESCO bring contributions and unique benefits to the U.S. scientific research efforts and also promote selected

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37/ Writing in response to the Commission's inquiry were leaders of major scientific societies. See section VII of this paper.

38/ See especially: Summary Conference Report. In U.S. Department of State. A Critical Assessment of U.S. Participation in UNESCO. Special Meeting of the U.S. National Commission for UNESCO, op. cit., p. 1-2; [National Science Foundation]. Natural Sciences in UNESCO: A U.S. Interagency Perspective, 1984, passim.; and Letter from Walter A. Rosenblith, Foreign Secretary, National Academy of Sciences to Gregory J. Newell, Oct. 21, 1983.

39/ Different views were expressed by Paul T. Baker, Chairman of the National Research Council's Subcommittee on UNESCO Science Programs and Chairman of the U.S. Man and the Biosphere Program. Severely limited funds have prevented assessment of U.S. participation in UNESCO's S and T activities. Most participation, he reported, consists of private activities of individual scientists. However, ". . . most U.S. scientists perceive a hostility to UNESCO involvement and thus deemphasize any relationship." This is especially relevant in congressional dealings with the MAB program. But he agreed that the United States should stay in UNESCO (Baker, Paul T. Review of U.S. Participation in UNESCO. Attached to Letter from Paul T. Baker to Dr. James B. Holderman, U.S. National Commission for UNESCO, Oct. 5, 1983).

U.S. foreign policy goals, including development assistance." 40/

Losses to U.S. science from withdrawal, according to the NSF interagency report, would include:

> significant reduction in the direct access the U.S. scientific community now enjoys to important data bases, localities, and scientific resources throughout the world. Withdrawal from UNESCO membership would result in a general decline in the leadership position the U.S. now holds in international science and also contribute to the further politicalization of UNESCO in ways detrimental to U.S. national interests. 41/

The State Department, in its report, U.S./UNESCO Policy Review, described the benefits of UNESCO science programs to scientific inquiry, but was more circumspect than the NSF interagency report in discussing the consequences of withdrawal on international harmony and scientific collaboration. It was far more confident than the NSF report about the ability of the United States to continue to conduct international science on a unilateral or bilateral basis and about the possibility of developing effective alternatives to UNESCO science programs.

Reactions from other sources, which described the benefits of UNESCO to U.S. science and and the losses that would result from withdrawal are summarized next:

On the benefits to multilateral cooperation:

> UNESCO provides a unique mechanism to facilitate international scientific activities; without the multilateral sanctions and structures provided by UNESCO, each nation would have to enter into costly and cumbersome bilateral arrangments in order to conduct international science. Some sciences and critical global problems are international by nature and cannot be pursued properly by one nation without access to the data, resources and cooperation of scientists in other countries, and legal agreement by other nations. Examples include the earth sciences,

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40/ [National Science Foundation.] Natural Sciences in UNESCO: A U.S. Interagency Perspective, typescript, 1984, p. 7.

41/ Ibid., p. 5.

oceanography (research within 200-mile limit boundaries), and climatology, the core disciplines of UNESCO's large cooperative programs, such as MAB, and IGCP. 42/

On the contributions of UNESCO to sharing research costs:

UNESCO projects also allow researchers and governments to share costs of conducting research that most nations could not afford by themselves. For instance, U.S. Government officials have reported that the IOC program has saved the Government over $1 billion in ocean research program costs over the last ten years. 43/

On the special importance of UNESCO to the social sciences:

UNESCO's international role is also important in the social sciences. For instance, according to the response of the Social Science Research Council to the survey by the U.S. National Commission for UNESCO: ". . . UNESCO plays a unique role in providing opportunities for international contact among social scientists on methodological issues, and also practical current problems in social, economic, and political change. UNESCO, or its functional equivalent, is needed to improve the quality of our own social analytic skills and our knowledge of problems and events in other areas of the world. If UNESCO did not exist, we would have to invent it." 44/

On UNESCO's importance to informal communications networks:

By withdrawing from UNESCO, the U.S. scientific community would lose the benefits of access to a precarious communications network among scientists established by UNESCO after years of hard work. 45/

42/ Solomon, A. K. Stay in UNESCO. New York Times, Jan. 2, 1984: editorial; Weisburd, S. Science News, Jan. 28, 1984: Letter from Walter A. Rosenblith, Foreign Secretary of the National Academy of Sciences to Gregory J. Newell, Assistant Secretary of State, Oct 21, 1983.

43/ Interview with a staff member of the National Oceanographic and Atmospheric Administration, Feb. 23, 1984.

44/ Szanton, David L. Letter to Gregory J. Newell, Department of State, Oct. 26, 1983.

45/ [Prof. Hans] Weiler Criticizes Planned U.S. Withdrawal From UNESCO. Stanford University News Service, Jan. 27, 1984, p. 1; Solomon, op. cit.

On the benefits of UNESCO to U.S. scientific inquiry:

UNESCO aids U.S. foreign relations by providing U.S. scientists with access to scientists in countries with which this Nation maintains only limited diplomatic relations.

On UNESCO's contributions to science in less developed countries:

UNESCO aids international science by providing seed money to Third World scientists to develop science infrastructure, and to attend international scientific meetings, which enhances the knowledge base of U.S. scientists, serves humanitarian purposes, and sensitizes third world scientists and governments to the global implications of many of their technological development projects. 46/

On UNESCO's catalytic role in developing new international scientific organizations:

UNESCO facilitates the development of new international governmental and nongovernmental projects initiated with UNESCO "seed" capital, such as the International Center for Theoretical Physics at Trieste, CERN, the European Nuclear Research Organization, 47/ and the newly formulated International Organization for Chemical Sciences in Development, created by the American Chemical Society and other organizations. 48/

On how UNESCO's programs aid progress in basic research:

Basic research would suffer overall if the United States withdrew from UNESCO because " . . .[T]he programs which approach basic scientific problems of interest to U.S. scientists would probably be deemphasized and the programs designed to emphasize technological improvement in the developing countries emphasized. Such a move would also be likely to decrease the financial support for . . . ICSU and its constitutent unions." 49/

46/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 4.

47/ Weisburd, S. Science Caught in U.S.-UNESCO Crossfire. Science News, Jan. 28, 1984.

48/ Seaborg, Glenn T. An International Effort in Chemical Science. Science, v.223, Jan. 6, 1984: editorial.

49/ Review of U.S. Participation in UNESCO. Comments by Paul T. Baker for the U.S. National Commission for UNESCO. Attachment to Letter from Paul T. Baker to Dr. James B. Holderman, Chairman, U.S. National Commission for UNESCO, Oct. 5, 1983.

On the importance of UNESCO-generated data, especially to U.S. intelligence agencies:

If the United States withdrew from UNESCO it might lose access to important research data generated abroad, especially in oceanography and water resources, and science-related statistics. This might be especially harmful to U.S. intelligence agencies. 50/

50/ Interview, U.S. Department of State, UNESCO office. See also: Soren, Ronald K. International Science, Letter to the Editor. Science, v, Feb. 24, 1984, p. 771.

VII. SUGGESTIONS TO IMPROVE THE MANAGEMENT OF UNESCO'S SCIENCE PROGRAMS AND RELATED POLICY OPTIONS

The Congress may agree with the President's decision to withdraw from UNESCO, without taking additional action regarding the science activities. However, since withdrawal will not be effective until December 31, 1984, and the President said he might reconsider his withdrawal decision if UNESCO rectifies some of the problems perceived by the United States, the Congress may choose to play a role in shaping the future U.S. relationship to UNESCO in general and to the science activities, in particular. There are two general policy options, regarding science, each involving subsidiary decisions. The first option is to determine if and how the Congress might lend support to U.S. public and private efforts to restructure UNESCO to meet the major criticisms of the Department of State and the science community, and if so, in which areas. The second option is to determine if the United States should try to continue to participate internationally in programs sponsored by UNESCO, or if it should develop program alternatives to the UNESCO science programs.

This section of the report deals with the first option, concerning efforts to restructure UNESCO's science activities. The second option, together with criticisms of UNESCO's science programs, are discussed in the next section of the report.

Many suggestions have been offered about ways to improve the formulation and administration of UNESCO's science programs. For example, last Fall the U.S. National Commission for UNESCO voted 41 to 8 against the United States withdrawing from UNESCO and said the United States should stay in UNESCO in order to make desired changes. Prior to the vote, the U.S. National Commission

for UNESCO surveyed its organizational member to ascertain their views on withdrawal. Writing in opposition to withdrawal and offering suggestions for improvement were leaders of the Institute for Cancer Research, the American Association for the Advancement of Science, the National Wildlife Federation, the Social Science Research Council, and the Consortium of Social Science Associations, and also the Foreign Secretary of the National Academy of Sciences and the chairman of the U.S. Man in the Biosphere Program. These reactions, coupled with other criticisms, seem to have given momentum to efforts aimed at revamping UNESCO and at improving U.S. policy for UNESCO. In this connection, the National Academy of Sciences plans to establish a subgroup within its ICSU review committee to assess what can be done to improve UNESCO and to look at program alternatives. 51/ The Department of State is now selecting 15 members of a high-level advisory panel, to be composed of academics and other public and private sector experts to monitor changes made in UNESCO, and to advise if the United States should reverse its decision. 52/ The Department of State has also convened a public/private group to discuss developing programmatic alternatives to some of the UNESCO programs. 53/ The first meeting was held on March 5, 1984.

Problems, suggested reforms, and policy options in the science sector are summarized next.

51/ Interview, a staff member of the National Academy of Sciences, Feb. 1984.

52/ Interview with a staff member of the Dept. of State, Feb. 1984. See also: Lewis, Paul. U.S. Says It May Not Quit if UNESCO Changes. New York Times, Feb. 16, 1984, p. A6.

53/ Ibid.

A. PROBLEM 1. SHOULD THE U.S. GOVERNMENT BETTER SPECIFY AND IMPLEMENT ITS SCIENCE GOALS FOR UNESCO?

1. The Issue

One of the major criticisms made by scientists is that the United States is unclear about what it wants from the UNESCO science programs and should clarify its goals. Specifically, critics refer to the fact that when UNESCO was created, its science mission was limited to promoting intellectual exchange and communication at the highest levels. In practice, UNESCO's science mission seems to have changed notably since then, with the expansion of its membership to include over 100 developing countries, which are interested primarily in technical assistance and applied science to enhance development. According to some observers, American scientists generally are more interested in UNESCO supporting basic science. They say the United States is unclear about what UNESCO's role should be in promoting development, especially in using in science and technology to achieve development. 53/

According to some observers, this ambiguity causes the United States to misperceive the majority of UNESCO's members' views about the need for UNESCO to support applied research and technology studies, as opposed to "international cooperative science" and basic research. This often causes the United States to criticize or neglect the UNESCO efforts oriented toward developing science infrastructure in developing countries.

53/ Interviews, Department of State UNESCO officials; interview, a staff member pf the National Academy of Sciences. See also, for instance, Eugene G. Kovach, U.S. Government Participation in the Science and Technology Programs of Selected Multilateral Organizations. Washington, D.C., National Science Foundation, Feb. 1978, p. 32, 39.

As a result, the United States loses influence in UNESCO governing councils or has low respect for the deliberations of UNESCO constituent bodies. 54/ Also, some critics say, the United States ignores the potential complementary relationship between U.S. Agency for International Development Programs and UNESCO programs, as well as U.N. Development Program grants, administered by UNESCO. 55/ (As noted above, UNESCO administers UNDP programs, which receive a separate congressional appropriation, which is about the same size as is the U.S. contribution to UNESCO. By withdrawing, the United States would have no influence over the use of its funds for UNDP projects within the UNESCO bureaucracy.)

This ambiguity in goal definition has resulted in some U.S. Government scientists questioning whether UNESCO's MAB and IHP programs should focus as much as they do on applied, as opposed to basic, research. Some of these governmental scientists have called for withdrawal from these programs because they neglect basic research. 56/

2. Policy Options

The fundamental policy issues are: does the United States want to use UNESCO for applied science activities and technical assistance-related science or should it insist that UNESCO emphasize only basic science? Congress may choose to articulate precise U.S. goals for UNESCO. The Congress may want to determine more precise policy for U.S. multilateral technical assistance. For instance, if the United States wants to promote basic science in UNESCO, and exclude applied science, as an alternative, should it enlarge its support for the U.N. Committee on Science and Technology for Development, created following the U.N. Conference on Science and Technology for Development?

54/ Fobes, John. E. U.S. and UNESCO: The Folly of 'Copping Out." New York Times, Jan. 1, 1984, Letters; Kovach, op. cit., passim.; and [National Science Foundation.] Natural Sciences in UNESCO, p. 6.

55/ Kovach, op. cit., pp. 37-38; interview, Department of State, UNESCO office.

56/ Interviews, Department of State and National Academy of Sciences.

B. PROBLEM 2. SHOULD THE U.S. GOVERNMENT GIVE MORE FINANCIAL AND ORGANIZATIONAL ATTENTION TO INTERNATIONAL SCIENCE?

1. The Issue

Another criticism heard is that U.S. influence in UNESCO is directly related to the amount of high-level attention the United States gives to international science, and that, recently, the Government has neglected this area, with the expected consequence. For instance, Arnold Kramish, a former Science Attache to the U.S. Permanent Delegation to UNESCO, attributed the inception of UNESCO's hydrology, biosphere, oceans, and geological programs to U.S. initiatives supported at the highest levels in the White House, during

> . . . a period where the White House Science Office had two or three invididuals dedicated to international programs, individuals who provided the momentum for those programs and who interceded on behalf of those programs when they faltered. The momentum was lost when the few individuals who supported the science programs in the U.S. Government vanished or found other priorities. 57/

Budgetary constraints have also contributed to the erosion of high-level Government support for international science. For many years the National Academy of Sciences and National Research Council provided "outreach" and advising functions for the U.S. National Committee for UNESCO by organizing special UNESCO-related oversight committees. The last of these was terminated in the Spring of 1983, as a result of funding cuts. 58/ (Support for the committee came from funds to support ICSU that the Academy received

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57/ Panel Commentary: Mr. Arnold Kramish. In A Critical Assessment of U.S. Participation in UNESCO. Special Meeting of the U.S. National Commission for UNESCO, op. cit., p. 15.

58/ Interview, National Academy of Sciences staff members.

from NSF. The NSF support was cut back and the Academy decided to terminate the committee.) For many years, until recent budget cuts, the NSF also had a senior staff member on the staff of the Permanent Representative to UNESCO in Paris. In addition, as noted above, the State Department has reduced funds and staff for the U.S. National Commission for UNESCO.

2. Policy Options

The Congress may wish to consider the following options. The Foreign Secretary of the National Academy of Sciences suggested that the Government increase funding for U.S. Government guidance of UNESCO science programs and shift the locus of official program guidance for science from the Department of State to the National Science Foundation, in collaboration with the National Academy of Sciences. 59/ The NSF report to the Department of State called for more high-level leadership and U.S. financial support for UNESCO. 60/ Others have suggested that the U.S. establish a mechanism to monitor UNESCO science activities better. Along these lines, Eugene Kovach, a former science official at NATO, suggested that the Department of State improve the quality of its science office at the Department of State and the caliber of the science attache attached to the U.S. Permanent Delegate to UNESCO. 61/

C. PROBLEM 3. CAN UNESCO DEPOLITICIZE ITS STAFF? CAN THE QUALITY OF U.S. STAFF AT UNESCO BE IMPROVED?

1. The Issue

A critical issue to many scientists is improvement of the caliber of the UNESCO science bureaucracy and reduction of overhead expenses. The charges are that third and fourth world nationals dominate the UNESCO secretariat,

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59/ Letter from Walter A. Rosenblith, Foreign Secretary, National Academy of Sciences, to Gregory J. Newell, Oct. 21, 1983, p. 2.

60/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 7.

61/ Kovach, op. cit., p. 37, 38.

making it difficult for the United States to implement many of its ideas. Scientists have charged that the UNESCO bureaucracy focuses on applied science, or in attempting to satisfy too many members, creates too many programs, which are superficial and ineffective because of limited support. 62/ There are also allegations that 80 percent of the total UNESCO budget is spent in Paris, leaving little money for field operations. The NSF interagency report summarized this issue and its implications as follows:

> UNESCO is an imperfect organization. U.S. dissatisfaction is mainly directed at UNESCO's organizational shortcomings, which may include high administrative costs, quality of staff recruited from LDCs, insufficient evaluation of projects, and difficulties in terminating projects. Dissatisfaction directed at failures to achieve one or more of the short-range priorities . . . often does not allow for adequate consideration of long-range priorities. UNESCO's support of science projects is diffuse and underfunded. 63/

To rectify these problems, UNESCO would have to adopt revised personnel allocation regulations. This may be difficult to implement since it appears that political factors often guide selection of personnel. UNESCO recently announced new regulations reserving about 700 of its 900 senior staff member slots for non-Westerners. However, there also are reports that U.S. staff quotas at UNESCO remain unfilled. 64/ The Congress, via oversight and authorizations, may seek to deal with this issue.

2. Policy Options

> The Foreign Secretary of the National Academy of Sciences recommended the creation of an international visiting committee of distinguished scientists and science administrators to help design a review mechanism

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62/ Weisbrud, op. cit., passim.

63/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit. p. 5.

64/ Gerrymandering the Market Place of Ideas. Chronicle of International Communication, v. 4, Dec. 1983. p. 1, Kovach, op. cit., passim.

to evaluate the merit and management of UNESCO science programs. 65/ Others recommend mandatory and regular turnover of the professional staff. 66/

There is also criticism about U.S. personnal connected with UNESCO staff. 67/ Some have suggested that the U.S. Government make more effort to improve the quality and caliber of U.S. nationals on the UNESCO staff and that more efforts be made to fill American representation up to established quota levels. 68/

D. PROBLEM 4. SHOULD EFFORTS BE MADE TO IMPROVE DISSEMINATION OF SCIENCE INFORMATION ABOUT UNESCO IN THE UNITED STATES?

1. The Issue

Suggestions have been made to increase public knowledge of UNESCO in the United States. The U.S. National Commission for UNESCO used to provide some outreach and publicity for UNESCO's programs and activities. Since the nongovernmental activities of the Commission have been sharply curtailed, this is no longer as likely as before.

2. Policy Options

The suggestion has been made that the Government award funds to U.S. scientific professional societies to help them identify and disseminate information about worthwhile UNESCO science and technology projects to their members. 69/

Another option is to restore all the activities of the U.S. National Commission for UNESCO.

65/ Rosenblith to Newell, op. cit., p. 2.

66/ Weiler, op. cit., p. 2. See also Letter from David L. Szanton, Social Science Research Council to Gregory J. Newell, Oct. 26, 1983.

67/ Kovach, op. cit., p. 34, 35.

68/ Weiler, op. cit., p. 2; [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 6.

69/ Interview, State Department Staff, Feb. 1984.

VII. ALTERNATIVES TO UNESCO'S SCIENCE PROGRAMS

As noted above, each UNESCO science program is governed by a complex web of relationships and administrative structures. The continuation of U.S. participation in each program after U.S. withdrawal, therefore, depends on the degree of UNESCO involvement in program management. Indications are that if the United States withdraws from UNESCO it would forfeit membership in the MAB and the IHP. It probably would be allowed to continue in most IOC activities, but might not be allowed by UNESCO to have any influence on IOC budgetary decisions. It would be allowed to participate in some IGCP programs via intergovernmental union membership. UNESCO might require the United States to cease participating in other UNESCO science programs.

Some have suggested that UNESCO staff may seek to continue to allow as much non-official U.S. scientific participation as possible, to benefit from the excellence of U.S. science. But even so, the U.S. Government would not be able to influence program and budget decisions formally.

In discussing the U.S. notification of withdrawal from UNESCO, State Department officials indicated that if the United States withdraws, the President would use funds that would have gone to UNESCO to support international cooperative programs of the same nature. But they acknowledge it will be more difficult and more expensive to maintain U.S. participation in such programs. Congress may seek to shape priorities for allocation of these funds by determining which, if any, of the UNESCO international cooperative

programs or other projects merit reconstruction as bilateral programs, or continuation in other multilateral organizations. Any changes would have to be negotiated with other governments participating in the programs.

The Department of State and the NSF interagency report have come to opposing conclusions about this issue. According to the Department of State:

> Other multilateral, intergovernmental and nongovernmental scientific organizations, for example, the [World Meteorological Organization] WMO and the ICSU, are often more successful in certain international activities than UNESCO. The U.S. could increase its support of these organizations. 70/

The National Science Foundation report, in contrast, concluded:

> [Other organizations] . . . would not replace the contributions and unique benefits the United States obtains from membership in UNESCO. 71/

Most scientists agree that ICSU is not a viable alternative in which to conduct the kinds of programs sponsored by UNESCO since most third and fouth world countries are not members of ICSU and ICSU is oriented primarily to basic science. Furthermore, it is widely believed that ICSU does not have the resources or operational capabilities to implement most global programs. These resources probably will be cut even more if the U.S. withdraws from UNESCO since UNESCO provides staff for an ICSU secretariat. 72/ Working through ICSU would also be more expensive than working via UNESCO according to one commentator, Paul Baker, who said:

> To obtain the funds for ICSU to do the necessary job, a sum equal to our UNESCO dues would be required; while bilateral international cooperative programs of the scale demanded through ICSU would require such massive U.S. financing and influence that many participating

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70/ Department of State. U.S./UNESCO Policy Review, op. cit., p. 15.

71/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 7.

72/ Walsh, John. Administration Announces Intent to Leave UNESCO, Science, v. 223, Jan 13, 1984, p. 150.

countries would refuse to cooperate. Even if most countries represented in ICSU did participate, many programs would suffer, since . . . only a limited number of countries are members. 73/

The Foreign Secretary of the National Academy of Sciences recommended a strengthening of the relationship between UNESCO and ICSU to improve the functions of both organizations. 74/

Among the issues which would warrant attention in a determination of future policy in this area are:

- an assessment, with the assistance of the science community, to determine which UNESCO cooperative projects are most essential, from the point of view of both politics and science, and should be continued. Apparently U.S. agencies and the National Academy of Sciences have plans to assess how the United States might continue to participate in, or develop alternatives for, specific UNESCO programs. Several other related issues warrant attention. What level of appropriations would be required to support these programs during the transition to unilateral or bilateral U.S. leadership? What kind of international coordination network would be required for managing these activities internationally? Would the costs of a new "secretariat" exceed UNESCO's management costs? Will other countries cooperate in global science efforts spearheaded by the United States or will they seek to continue UNESCO-sponsored activities? What kinds of new bilateral arrangements would the United States need to conclude to sanction the proposed research activities?

- an assessment of the feasiblity and costs of entering into necessary bilateral arrangements with other countries to permit research to be conducted. The National Science Foundation report concluded that bilateral cooperation cannot substitute for projects requiring concerted multilateral action. 75/ Others have said bilateral arrangements would prove to be far more costly than the UNESCO activity.

In conclusion, the U.S. Congress may seek to shape future international science policy in UNESCO or in other agencies. This report has described benefits and problems with UNESCO's science activities and alternatives that might warrant congressional attention.

73/ Baker, op. cit., p. 4.

74/ Letter, Rosenblith to Newell, op. cit.

75/ [National Science Foundation.] Natural Sciences in UNESCO, op. cit., p. 6.

UNESCO SCIENCE PROGRAMS:

IMPACTS OF U.S. WITHDRAWAL AND

SUGGESTIONS FOR ALTERNATIVE INTERIM ARRANGEMENTS

A Preliminary Assessment

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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

This report has been reviewed by a group other than the authors according to procedures approved by the Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

The National Research Council was established by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and of advising the federal government. The Council operates in accordance with general policies determined by the Academy under the authority of its congressional charter of 1863, which establishes the Academy as a private, nonprofit, self-governing membership corporation. The Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in the conduct of their services to the government, the public, and the scientific and engineering communities. It is administered jointly by both Academies and the Institute of Medicine. The National Academy of Engineering and the Institute of Medicine were established in 1964 and 1970, respectively, under the charter of the National Academy of Sciences.

This report has been prepared by the Office of International Affairs, National Research Council, for the Office of Communications and UNESCO Affairs, Bureau of International Organizations, U.S. Department of State, under Contract DOS 1021-410172.

PREFACE

In reply to a letter from the Chairman of the House Committee on Foreign Affairs requesting views on the announced U.S. withdrawal from UNESCO (scheduled to take place on December 31, 1984), the President of the National Academy of Sciences stated that "the Governing Board of the National Research Council and the Council of the National Academy of Sciences are deeply concerned about the potential impacts on science of a withdrawal by the United States from UNESCO." Withdrawal will have significant implications for global science programs in which U.S. scientists are deeply involved, often in a leadership role. Therefore, the Academy, through the Office of International Affairs (OIA) of the National Research Council (NRC), agreed to respond to an invitation to provide the U.S. Department of State with an assessment of potential impacts and to suggest possible alternative arrangements in order to maintain essential U.S. scientific contacts with UNESCO-sponsored programs in case the U.S. were no longer a member of UNESCO on January 1, 1985.

The strategic considerations that provide the basis for the study, including significant caveats and limitations that pertain to the findings, are discussed in Chapter 2. An important summary of general preliminary findings will be found in Chapter 3. The assessments and proposed interim arrangements for specific programs and subprograms within the three major science program sections of the UNESCO Approved Programme and Budget for 1984-85 are further detailed in Chapter 4.

Constraints of time and money, in addition to limited analytical background material, seriously influenced the scope of the study. Normal NRC procedures, which typically include a specially appointed study committee, proved impossible in this instance. We did, however, avail ourselves of a well-balanced ad hoc group, and the present report has been reviewed by several distinguished members of the scientific community. The detailed analysis of the UNESCO program and budget was conducted by a consultant, Dr. Philip Hemily, and the OIA staff. This examination was augmented by interviews with U.S. scientists engaged in, or familiar with, the science activities of UNESCO.

U.S. budgetary cycles make it imperative to convey some preliminary findings now since preparation of funding recommendations is under way. It is clear, however, that a much more detailed and critical analysis of the science programs of UNESCO and of other intergovernmental organizations is badly needed. The present study is dedicated to the hope that such a broad-gauged review will be implemented.

Walter A. Rosenblith
Foreign Secretary
National Academy of Sciences

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Chapter 1

INTRODUCTION

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) was founded in 1946 "for the purpose of advancing, through the educational and scientific and cultural relations of the peoples of the world, the objectives of international peace and of the common welfare of mankind. . ."

The announced U.S. intention to withdraw from membership in UNESCO at the end of 1984 has prompted concern within the scientific community, both national and international, about the consequences for global science cooperation. Problems of the earth, oceans, atmosphere, environment and the cosmos require the collaboration of scientists on a worldwide scale. Although science represents only a part of the total UNESCO mandate, and about one-third of the budget, it is a significant element that historically has facilitated important contributions to the spirit of international cooperation and to the advancement and health of the scientific enterprise. UNESCO is one of many international institutions for science cooperation that have developed in the post-World War II era and is unique in the breadth of its concerns, giving testimony to the important linkages between education, science and culture. Although official U.S. withdrawal from this forum has implications for all the programs of UNESCO, this report focuses only on the science programs. The prospect of U.S. nonmembership in UNESCO raises questions about the immediate implications for ongoing collaborative programs in which the United States is an active participant as well as for the long-term future of U.S. involvement in international science activities.

As a private institution, the National Academy of Sciences is not a formal participant in UNESCO, an intergovernmental organization. However, because of the involvement of the U.S. scientific community in many UNESCO-sponsored science activities, the Council of the NAS and the Governing Board of the National Research Council have expressed concern regarding the impacts on science of a U.S. withdrawal from UNESCO.[1] In March, the Academy, through its National Research Council, offered to assist the Department of State in assessing the impacts on some of the major science programs and to suggest possible

alternative arrangements whereby essential U.S. scientific collaborations could be maintained. It is important to note that the issue posed was not whether the United States should or should not withdraw from UNESCO. The Academy had already expressed the view that, on balance, U.S. science gains more than it loses from participation in UNESCO science programs. This report, therefore, makes no statement on the fundamental question of withdrawal. The present approach is one of helping to minimize the costs of a decision that was made, not on the basis of scientific considerations, but on a range of other, largely political, factors. Also, although it is recognized that UNESCO as an institution could benefit from some reform, particularly at the management level, this report does not, to any significant degree, deal with that issue.

The growth and diversification of science and the rapid expansion in the number of participants in international activities has created a tremendously complex situation that is straining the capabilities of international institutions for cooperation. In the science area there is a vast array of organizations, intergovernmental and nongovernmental, dedicated to the promotion of international cooperation . In large part, this stems from the universality of the scientific enterprise itself and the need to share and confirm research findings world wide, an inherent feature of scientific progress and global cooperation. The development of the UN system of specialized agencies has been an important complement to the many nongovernmental organizations that have emerged within individual professional communities. UNESCO, in particular, has fostered contacts and interactions with such organizations, most notably in the science area, with the International Council of Scientific Unions (ICSU) and its individual disciplinary unions.[2] It is possible, therefore, to begin to identify a number of potential alternative organizations based largely on existing patterns of cooperation with UNESCO as a partial response to the problem. However, as will be amplified in the following chapter on strategic considerations, there has not been either time or resources in this study to consult with these organizations to determine their capability and/or willingness to serve in this capacity. This has to be a major concern, in terms of the viability of the proposed alternatives. Since the time frame of the present report relates primarily to FY-86, other alternative options that are outlined feature support to UNESCO for specific activities, particularly for the major intergovernmental programs, and increased resources to national agencies to be utilized for facilitating U.S. participation in UNESCO programs within their areas of competence.

The present study emphasizes the need to inquire more deeply into the objectives, consequences, and benefits of U.S. participation in intergovernmental science programs and relationships between intergovernmental and nongovernmental organizations. The absence of an overall strategic policy framework for U.S. participation in international science is a severe handicap. There is a need to clarify the various means of intergovernmental scientific and technological cooperation and to reach common understandings on the most imaginative, productive ways of utilizing our intellectual and financial resources. This is an important issue not only for the United States, but also for

other countries which will be affected by U.S. withdrawal. The U.S. inclination to utilize alternative forums also has implications for the overall funding of international science that need to be viewed in a larger policy context than just UNESCO. New models for international science cooperation may be required to meet contemporary needs both for advancing science and for strengthening infrastructures in developing countries.

Questions are being posed with regard to the value of specific areas of UNESCO-sponsored programs to the U.S. scientific community: How well does UNESCO carry out these programs? Are the programs that are directed primarily toward the needs of developing countries adequately designed and implemented? Is UNESCO the most effective organization for carrying out these programs? If so, is there sufficient guidance and participation from the worldwide science and technology community to ensure effective and efficient program implementation? What measures might be taken to improve the performance of UNESCO? What might be the loss to our scientific community, as well as to those of other countries, if the United States withdraws fom UNESCO on December 31, 1984? Coupled with this last question is the significance of the contributions of the American scientific community to UNESCO. It is some of these questions that the following assessment attempts to address.

REFERENCES

1. Letter from Dr. Frank Press to Congressman Dante Fascell, April 17, 1984.

2. The International Council of Scientific Unions (ICSU) represents the principal nongovernmental mechanism created by scientists to advance scientific interests on an international basis. The structure of ICSU is based on dual membership, encompassing 20 disciplinary scientific unions and 70 national members. The national members are usually academies or national research councils. In the United States, the National Academy of Sciences is the adhering body to ICSU as well as individually to 17 of the member unions. ICSU and the unions, with a combined annual budgetary level of $5 million, provide an important framework for the orderly handling of international, nongovernmental scientific cooperation.

Chapter 2

STRATEGIC CONSIDERATIONS

THE U.S. DECISION TO WITHDRAW FROM UNESCO

The Secretary of State notified the Director General of UNESCO on December 29, 1983, that the United States would withdraw from UNESCO on December 31, 1984. This letter of notification charged that UNESCO had "extraneously politicised virtually every subject it deals with; exhibits hostility toward the basic institutions of a free society, especially a free market and a free press; and demonstrated unrestrained budgetary expansion."[1]

Assistant to the President for National Security Robert C. McFarlane noted, in a memorandum of December 23, 1983, to the Secretary of State, the President's approval of notification of withdrawal, but also his desire to promote meaningful changes in UNESCO during 1984.[2] A second memorandum of February 11, 1984, from McFarlane proposed a strategy including an action plan and the mobilization of international support to assist the effort to promote changes in UNESCO during 1984.[3]

A U.S. Monitoring Panel, comprising 15 eminent citizens knowledgeable in UNESCO's various areas of activity, was established in March 1984. It was instructed to report to the Secretary of State near the end of 1984 on the degree and kinds of change that might have occurred in UNESCO in the interim, with a view to assisting the Secretary in determining whether to recommend revision of the decision to withdraw.[4]

Nonetheless, the State Department has stressed the fact that its decision to withdraw is firm. Barring unforeseen changes and developments, it is assumed that the United States will no longer be a member of UNESCO as of January 1, 1985. The Administration has also stressed that the United States would continue to participate in programs that meet the original goals of UNESCO and thereby "pursue international cooperation in education, science, culture, and communications by shifting our contribution to other appropriate bilateral, multilateral, or private institutions."[5] It should be noted, with reference to pursuing UNESCO types of international cooperative activities through other channels, that the current level of total U.S. mandatory contributions to UNESCO is on the order of $50 million per year, with science activities funded at about $14 million per year.

During the period preceding the December 1983 announcement of the decision to withdraw, a wide-ranging review of UNESCO activities was carried out under the auspices of the Department of State. This review drew on the views of a number of U.S. public and private institutions

which benefited from, participated in, or contributed to UNESCO activities in education, science, culture, and communications. The objective was to produce, in light of the information gathered, an analysis of overall political and management trends in the Organization.[6] Some 12 U.S. government agencies contributed to this US/UNESCO Policy Review from their special perspectives, as did the U.S. National Commission for UNESCO and the National Academy of Sciences. The organizations concerned with science programs reached the conclusion that the United States should continue its participation in UNESCO.[7]

However, the State Department's own analysis of political and management trends provided the basis inter alia for the decision to recommend U.S. withdrawal.

At the same time, the Department's US/UNESCO Policy Review stated that "UNESCO science activities generally satisfy U.S. objectives and priorities." It went on to note five consequences of withdrawal:

- U.S. withdrawal from UNESCO science activities, if not compensated by alternative forms of cooperation, could lead to a significant reduction in the direct access of the U.S. scientific community to important data bases, localities, and scientific resources worldwide.

- The decrease in income from dues would damage UNESCO's ability to meet the U.S. objective of assistance to LDCs (less developed countries) in developing scientific capabilities and infrastructure, and to perform the successful international scientific projects which UNESCO has sponsored.

- The United States would lose its present access to an important international framework for scientific cooperation and data gathering.

- UNESCO provides the possibility of scientific exchange with certain countries with whom we maintain limited contact. Withdrawal would make such cooperation more difficult.

- The United States would no longer be eligible for membership on the International Coordinating Council of the Program on Man and the Biosphere, the Coordinating Council of the International Hydrological Program, and the Intergovernmental Council for the General Information Program.[6]

Given these consequences, it is necessary to explore alternative ways of pursuing U.S. objectives of international cooperation and collaboration in the science area. As a partial contribution to the effort, this report presents assessments of the impact on U.S. science of a withdrawal from UNESCO and suggests possible alternative arrangements for assuring continued U.S. association with selected UNESCO programs.

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STRATEGY FOR THE SCIENCE ASSESSMENT

The genesis of the task of assessment undertaken by the National Research Council can be briefly summarized. In October 1983, when consultations were in progress on contributions to the US/UNESCO Policy Review, noted above, the Foreign Secretary of the National Academy of Sciences provided the Assistant Secretary of State for International Organizational Affairs (at his request) with some initial views pertaining to the quality and management of UNESCO science activities. In particular, he noted:

- Science-related programs represent, in many ways, UNESCO's most successful effort and fulfill an important function for the U.S. in terms of international science cooperation and science education.

- There is much criticism leveled at UNESCO programs, structure and management, but, in the area of the sciences at least, there is no real alternative to UNESCO at the present time.

- With respect to the management of UNESCO science programs, there is certainly room for improvement.

- The mechanisms necessary to ensure effective U.S. participation in UNESCO are not currently available.[8]

Following the announcement of the intention to withdraw from UNESCO, a number of bodies of the Academy complex considered the implications of withdrawal with respect to U.S. science interests and its impact on science in general. This process resulted in the letter of March 13, 1984, from the Foreign Secretary of the National Academy of Sciences to the Assistant Secretary of State for International Organizational Affairs offering assistance in assessing the impacts of the U.S. withdrawal in the science area and in identifying possible alternative arrangements for U.S. participation.[9] This initiative provided the basis for the contract between the Department of State and the National Academy of Sciences to prepare the following:

- An inventory of existing UNESCO-sponsored programs and arrangements for U.S. scientific cooperation (provided in a Supplement to this report);

- An analysis of the extent to which these arrangements depend or do not depend critically on affiliation with UNESCO;

- Suggestions for alternative interim arrangements for facilitating essential U.S. scientific interactions with UNESCO-sponsored programs;

- Initial recommendations of future U.S. directions in multilateral and global scientific cooperation (both within and outside UNESCO).

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Significant Sources

The assessment presented in this report drew on two particularly valuable recent reviews of UNESCO science activities that had been prepared in the light of the UNESCO problem: (1) "Natural Sciences in UNESCO: A U.S. Interagency Perspective,"[7] the October 1983 interagency report coordinated by the National Science Foundation (NSF) as a contribution to the US/UNESCO Policy Review, and (2) Science and Technology Programs in UNESCO,[10] the March 1984 report on the policy implications of a U.S. withdrawal from UNESCO prepared by the Congressional Research Service for the Subcommittee on Science, Research and Technology of the House Committee on Science and Technology. The present assessment, based on a broad range of consultations with professional colleagues who have participated in UNESCO-sponsored science activities, adds to the information provided in the above-mentioned reviews. The Approved Programme and Budget for 1984-1985[11] has been used as a basic UNESCO reference document.

Caveats

Limitations and constraints in carrying out this assessment must be emphasized. They were as follows:

- Time Frame. This assessment was prepared in four months. In reviewing such a comprehensive set of programs in such a short time, it has not been possible to contact the full range of science interests involved. A thorough critical review of all science programs has not been possible; the focus of the present study has been on measures to prevent disruptions in the first year or two of U.S. nonmembership in UNESCO.

- Community of Interests. The time constraints have ruled out any detailed evaluation of UNESCO-sponsored science activities, particularly in the area of developing country interests. An in-depth assessment would require, by definition, consultations with scientific peer groups abroad. This has neither been possible nor attempted. It should also be noted that no real attempt has been made to evaluate the field programs of UNESCO. Furthermore, a comprehensive assessment would need to include a careful evaluation of science programs of other intergovernmental organizations and particularly those of the UN system as a whole to better understand interactions and opportunities for promoting more effective international scientific cooperation.

- Information Base. As noted, UNESCO's Approved Programme and Budget for 1984-1985 has been used as a basis for assessing U.S. interests and participation. Like many budget program statements, the UNESCO document does not always convey a clear sense of substantive endeavor. Moreover, the United States lacks an institutional memory and a focal point for monitoring U.S. scientific interactions, both with respect to UNESCO in particular and to multilateral scientific relationships in general.

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Contacts with the U.S. Scientific Community

The present assessment has concentrated on bringing into play the personal views of American scientists and engineers who have participated directly, often in leadership roles, in the science activities of UNESCO. The following means were used to do so:

- Contact was initiated in April 1984 with American scientists serving as officers of international scientific unions or serving on corresponding U.S. national committees.

- Officers of U.S. scientific societies and associations were invited to query their members on the value of participation in UNESCO activities.[12]

- In cooperation with the Consortium of Affiliates for International Programs of the American Association for the Advancement of Science, a query was sent to members requesting information on specific experiences and judgments of UNESCO science activities.

- A letter to the editor, Science, April 13, 1984, invited comments from the U.S. scientific community on their participation in UNESCO scientific activities.

- The potential impact of withdrawal on particular science interests was discussed at meetings of U.S. national committees affiliated with international organizations and unions.[13]

- Personal contact was made through interviews (including phone communications) with U.S. scientists and engineers in academia, government, and industry involved in UNESCO science activities, particularly the major observational programs.

This approach has resulted in several hundred communications with American scientists and engineers.

FRAMEWORK FOR THE ASSESSMENT

In preparing the inventory of UNESCO science programs, assessing their dependence on affiliation with UNESCO, and suggesting alternative interim arrangements, the following areas of UNESCO-funded activities appearing in the Approved Programme and Budget for 1984-1985[11] were examined:

- Major Program VI: The Sciences and Their Application to Development

- Major Program IX: Science, Technology and Society

- Major Program X: The Human Environment and Terrestrial and Marine Resources

To a considerably lesser extent, Major Programs V.2 (Teaching of Science and Technology), VII (with respect to Scientific and Technological Information), and General Activities (statistics on science and technology) were reviewed. This material is included in the Supplement.

In order to put the science activities in perspective within the overall UNESCO program, a summary of the overall biennial budget of UNESCO is presented in Annex A. The activities considered in this review account for approximately 30 percent of budgetary resources devoted to regular UNESCO programs. There are also significant contributions to UNESCO science and training activities from other sources--particularly the United Nations Development Program (UNDP), United Nations Environment Program (UNEP), the UN Financing System for Science and Technology for Development (UNFSSTD), and non-UN sources--which are of the same order of magnitude as those provided to regular UNESCO programs. Summary budgetary information on the individual program activities considered in this review (Major Programs VI, IX, X) is provided in Annex B.

In carrying out the assessment, particular attention has been given to budgetary matters in order to be aware of the current U.S. contributions and to make it possible to suggest options for alternative channels of support in the future, including proposals for augmenting selected high-quality activities.

A certain number of questions and factors have been taken into account in proposing alternative channels:

- What are the means and limitations of maintaining U.S. participation and leadership?

- From the viewpoint of the United States, what are the most efficient and simple administrative procedures?

- Alternative channels suggested in this preliminary stage are most likely to be useful only on an interim basis.

- Account must be taken of the need for staff and overhead costs.

- There are special needs for project oversight by a U.S. scientific organization.

- Major consideration has been given to contributions to UNESCO to support specific programs and projects (e.g., Funds-in-Trust, donations, etc.). This approach may provide a simple means of support at a modest overhead charge.

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REFERENCES

1. Letter, George P. Shultz, Secretary of State, to Amadou-Mahtar M'Bow, Director-General of UNESCO, December 29, 1983.

2. Memo, Robert C. McFarlane, Assistant to the President for National Security, to George P. Shultz, December 23, 1983.

3. Memo, Robert C. McFarlane to George P. Shultz, February 11, 1984.

4. Charter of the Monitoring Panel on UN[illegible], March 22, 1984.

5. Memo, Robert C. McFarlane to George P. Shultz, December 23, 1983.

6. US/UNESCO Policy Review, Department of State, February 29, 1984.

7. Letter of transmittal from Deputy Assistant Director for Scientific, Technological and International Affairs, National Science Foundation, to the Assistant Secretary of State for International Organizational Affairs, October 21, 1983. The report, "Natural Sciences in UNESCO: A U.S. Interagency Perspective," was based on contributions from the U.S. Geological Survey and the National Park Service of the U.S. Department of the Interior, the Forest Service of the U.S. Department of Agriculture, the National Institute of Education of the U.S. Department of Education, the Agency for International Development, and a number of components of the Bureau of Oceans and International Environmental and Scientific Affairs of the U.S. Department of State.

8. Letter from NAS Foreign Secretary Walter A. Rosenblith to Assistant Secretary Gregory J. Newell, October 21, 1983.

9. Letter from NAS Foreign Secretary Walter A. Rosenblith to Assistant Secretary Gregory J. Newell, March 13, 1984.

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11. Approved Programme and Budget for 1984-1985, 22 C/5 (Paris: UNESCO, January 1984).

12. Meeting with representatives of professional societies, April 17, 1984: Gordon Bixler (American Chemical Society)
David M. Burns (American Association for the Advancement of Science)
Bahaa El-Hadidy (American Society for Information Science)
Marjorie Gardner (American Chemical Society)
J. K. Goldhaber (American Mathematical Society)
Dorothy P. Gray (National Commission on Libraries and Information Science)

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William G. Herrold (Institute of Electrical and Electronics Engineers)
Joan M. Jordan (American Meteorological Society)
Steven Kennedy (American Psychological Association)
W. Edward Lear (American Society for Engineering Education);
J. David Lockard (National Association for Research in Science Teaching)
Elliott A. Morse (Ecological Society of America)
Robert L. Park (American Physical Society)
Orr E. Reynolds (American Physiological Society)
Alan M. Schechter (Biophysical Society)
Robert D. Watkins (American Society for Microbiology)
Judith Wortman (American Institute of Biological Sciences).

13. Meetings with U.S. National Committees:
International Union of Pure and Applied Chemistry (3/17)
International Council of Scientific Unions (4/19)
International Union of Pure and Applied Physics (4/25)
International Union of Biochemistry (4/29)
International Brain Research Organization (5/15)
International Geological Correlation Program (6/12)
Internatinal Union of Geological Sciences (6/13)
International Union of Pure and Applied Biophysics (6/14).

Chapter 3

PRELIMINARY CONCLUSIONS

The present chapter summarizes preliminary conclusions of a general nature drawn from the assessments of specific program activities in Chapter 4 and raises a number of issues requiring further analysis. The information is presented in three sections: Assessments of UNESCO Programs, Impacts of U.S. Withdrawal, and Alternative Interim Arrangements. Two tables at the end provide a capsule summary of the assessments, preferred alternatives, and suggested funding levels for each of the principal areas of science activity.

It is important to emphasize that the present study is preliminary in nature. A much more comprehensive study is needed, one which will draw on the knowledge and experience of an even broader spectrum of the U.S. scientific community, as well as colleagues abroad.

ASSESSMENT OF UNESCO PROGRAMS

1. Key Program Areas. This report has attempted to deal with a wide range of scientific and technological activities sponsored by UNESCO. Not surprisingly, these activities vary in size, complexity, quality, and importance. Activities of major interest to the U.S. scientific community are in the following areas:

- Earth Sciences and Resources; Natural Hazards; the International Geological Correlation Program
- Water Resources; the International Hydrological Program
- Oceans and Resources; Coastal Regions; the Intergovernmental Oceanographic Commission
- Man and the Biosphere Program
- Natural Sciences; support of ICSU and activities sponsored by NGOs in the fields of biology, chemistry, physics

Measures need to be taken to plan and facilitate U.S. participation in these program areas if withdrawal from UNESCO becomes effective.

UNESCO work in engineering sciences, social sciences, and science policy appear to be of lesser interest to the concerned U.S. professional communities with only small numbers of U.S. scientists participating. Nevertheless, these are important areas, ones in which there is a potentially important role for American scientists to play.

2. Advancement of Science--Science for Development. Although UNESCO science objectives include the pursuit of new knowledge, particularly in observational scientific fields, increasing attention is being directed toward the science, science education, and advanced training needs of the developing world. The juxtaposition of science at the frontier and science for development highlights the multiple objectives of UNESCO and of nongovernmental scientific organizations. There is need to enhance understanding of the complementary and interactive nature of both these objectives.

3. UNESCO's Intergovernmental Role. As an intergovernmental organization, UNESCO is an important instrument in carrying out global observational programs (e.g., the Geological Correlation Program, oceanographic components of the World Climate Research Program, and the Man in the Biosphere Program). The authority and financial support of governments is often critical to field operations which involve the sovereignty of nations. On their own, nongovernmental organizations cannot substitute for intergovernmental ones in these areas of responsibility.

UNESCO is a critical intergovernmental link to the developing world for the implementation of projects involving advanced training and infrastructure building. These latter projects depend very much on substantive contributions from the advanced countries, primarily through nongovernmental scientific organizations such as ICSU and its constituent bodies.

4. Other Intergovernmental Organizations. Other intergovernmental organizations (e.g., UNDP, UNEP, WMO, FAO, and WHO) participate substantively and financially in many UNESCO-directed science programs. Those that make financial contributions often provide funds of the same order of magnitude as UNESCO's regular program. The UNESCO staff plays an important role in planning, advising, and managing many of these programs.

5. UNESCO and the Scientific Community. One cannot help but be impressed with the large number of UNESCO activities involving significant numbers of scientists who participate either directly or through nongovernmental organizations (NGOs). NGOs play an important role in many aspects of UNESCO's programs, particularly in engaging the participation of scientists in advanced training projects (IBRO, ICRO, MIRCENs) and in guiding/managing certain aspects of observational programs (e.g., IUGS, IUGG, IUBS, SCOR, SCOPE). UNESCO's programs would profit from even greater participation and association with the

NGOs. However, their capabilities to provide guidance and assistance in activities to meet the needs of the developing world could be improved.

6. U.S. Organization. The lack of responsible and scientifically competent oversight of U.S. interests in UNESCO science programs has been and continues to be a serious and chronic problem. A governmental focal point, having the requisite technical capability as well as significant international policy responsibilities, would provide much-needed support for American participation in the science programs of UNESCO. However, such a unit cannot be truly effective in the absence of an integral link to the scientific community and to their organizations. The continuing agenda of this joint enterprise would include:

- Assistance in the planning and implementation of scientific programs at world level;
- Concern for enhancing the participation of developing nations in programs that contribute to the common scientific good;
- Action plans backed by human and financial resources to encourage and support multilateral scientific initiatives.

IMPACTS OF U.S. WITHDRAWAL

1. Scientific Relations. In the short term (through 1985), it will be hard to judge the true impacts of withdrawal on U.S. science interests and on the quality of UNESCO science programs. Even if they appear to be only modest, early provision of resources to ensure continued U.S. participation must be made. In order to maintain confidence both here and abroad in U.S. participation in international science programs, withdrawal must be accompanied by a serious commitment, expressed in policy, institutional, and budgetary terms to a continued and strengthened American role.

2. U.S. Participation in Governance. With the possible exception of the Intergovernmental Oceanographic Commission (IOC) and, to a less certain degree, the International Geological Correlation Program (IGCP), the United States will forfeit the right to participate in the governance of major UNESCO-sponsored cooperative international programs upon withdrawal. Only limited influence can be exerted on the direction of these programs through U.S. participation in the cooperating NGOs. It is important to note again the role played by UNESCO staff in planning, advising, and implementing major programs supported from other sources (e.g., UNDP, UNEP, Funds-in-Trust). Withdrawal may seriously affect possibilities for American participation in program management roles as UNESCO staff members.

3. Discontinuities in UNESCO Planning/Implementation. In the event of U.S. withdrawal at the end of 1984, it will be necessary to

prepare for disruptions in project planning and implementation at UNESCO beginning in early 1985 in view of expected budgetary cutbacks. Although U.S. contributions to UNESCO are not normally due until the beginning of the next fiscal year (October 1, 1985, for FY-86), the lack of assurance of interim support until later in 1985 could contribute to an environment of uncertainty that will hamper UNESCO operations. Different forms of congressional appropriations will have to be found to respond to this extraordinary situation. There is an urgent need to move ahead in the United States with establishment of a joint governmental and nongovernmental mechanism to cope with the situation both in the short and longer term.

4. Disruptions in U.S. Scientific Participation. Uncertainties regarding funding will be disruptive to the many U.S. groups participating in ongoing UNESCO science activities. Some reprogramming of nationally available resources will be necessary. With regard to possible losses in access to data and research localities, it is difficult at this stage to make definitive judgments. The situation will depend, in part, on the degree to which U.S. scientists in their personal capacity would continue to be invited to participate in activities directly under the purview of UNESCO. A decrease in the number of such invitations will have an adverse impact on the quality of UNESCO science projects and consequently also on the benefit of such projects to the U.S. scientific community.

5. Disruptions in the International Research System. A period of uncertainty stemming from withdrawal will be disruptive to international cooperation in science and may strain U.S. scientific relations with peer groups in other countries. U.S. participation in multilateral activities and in the planning of new projects may be affected. Some readjustment and reappraisal of U.S. participation and leadership in international scientific cooperation may occur.

6. Capabilities of NGOs. Once alternative interim arrangements have been put into place, they will need to be evaluated and assessed in terms of how effectively NGOs are able to handle the new and more substantial responsibilities they may have assumed. It is clear that some NGOs as currently structured will have serious difficulties in carrying out greatly expanded roles. Thus, there will prevail, even in the second half of the decade, considerable uncertainty about how proposed new responsibilities can be matched to the capabilities of existing institutions.

7. Need for Enhanced U.S. Scientific Community Involvement. Those science programs that involve direct linkages with the concerned professional communities tend to be the most effective. During the coming months, it will be especially important to maintain and strengthen governmental and nongovernmental interactions, not only in the conduct of present programs, but especially in terms of planning and implementation of future international multilateral science activities.

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ALTERNATIVE INTERIM ARRANGEMENTS

The alternative arrangements proposed in this report are aimed at ensuring meaningful U.S. involvement in important UNESCO science activities if the United States withdraws from official membership in the organization at the end of 1984. This report does not address the wider ranging issue of an overall alternative approach to the U.S. role in multilateral science cooperation for the rest of this century. There is clearly an urgent need to do so.

For the major intergovernmental research programs and for other selected science activities in which the United States is involved, utilization of a grant to UNESCO is suggested. For other important science areas of UNESCO activity, support of cooperating organizations is proposed, usually as may be recommended by an appropriate U.S. agent. Thus, it is suggested that a significant portion of the available resources be earmarked for relevant U.S. institutions (governmental and in some cases nongovernmental), which would have important oversight and managerial responsibilities for U.S. participation in UNESCO programs in their particular areas of competence.

The consideration of alternative interim arrangements leads to a number of conclusions, poses a number of unknowns, and raises several issues that require further policy analysis:

1. No Viable Overall Alternative. There is at present no viable overall alternative for UNESCO's science programs. Furthermore, there is no simple set of alternative interim arrangements that will ensure future U.S. collaboration with current or future UNESCO projects. In fact, withdrawal will undoubtedly lead to a multiplicity of channels that may be more or less effective. Whatever alternative mechanisms are implemented, it is extremely important to ensure continuity of funding. Otherwise, irreversible damage to valuable current programs is inevitable. Proposing alternative mechanisms is also complicated by the possibility that the United States may rejoin UNESCO at a later date if appropriate reforms are achieved.

2. Danger of Fragmentation. Putting in place a variety of interim alternative arrangements for future funding and participation will result in a fragmentation of scientific and administrative relations. Moreover, there will be serious substantive, managerial, and financial costs that cannot be underestimated. However, the fact that UNESCO's activities include both development assistance programs and programs aimed at the advancement of scientific research makes the search for a single alternative extremely difficult, if not impossible.

3. Specific Program Support to UNESCO. In many cases, the most attractive and administratively simple alternative might be specific program support to UNESCO through the mechanism of Funds-in-Trust or donations. This type of contribution would be appropriate for large portions of the IOC, MAB, IGCP, and the IHP. It suffers, however, from the fact that there may be a lack of direct oversight (except for the IOC where the United States plans to retain membership). Perhaps some

form of periodic accountability could be required. At the very least, a strong focal point in the U.S. government will be extremely important. Mechanisms for program support to UNESCO will require clarification of the possibilities and limitations involved, particularly in terms of the U.S. role in program planning and implementation.

4. Cooperating Organizations. Subject to acceptance by cooperating organizations, it is relatively simple to propose alternative interim arrangements for those activities and programs for which well-established mechanisms of collaboration are in place, as is the case with ICSU, IBRO, ICRO, etc. One special situation is the Intergovernmental Oceanographic Commission (IOC), in which the United States can retain full membership even in the event of withdrawal from UNESCO. Other arrangements are primarily based on the current active advisory and managerial roles played by international nongovernmental scientific organizations (NGOs) in UNESCO-sponsored activities. However, there may be serious problems in planning new global observational programs that require intergovernmental cooperation and oversight.

5. Need for Consultations. The suggestion or designation of another intergovernmental or nongovernmental organization to act in the interim, on behalf of U.S. scientific interests requires careful negotiations and understandings that are agreed to by all sides involved. This will be a complex process in which the issues will need to be clarified over time. Also, there is as yet no way to judge how colleagues from other countries will react to U.S. proposals for alternative mechanisms of support for UNESCO science programs.

6. Role of ICSU. With respect to NGOs, the International Council of Scientific Unions (ICSU) might be considered the most logical candidate to facilitate U.S. participation in some well-established programs. ICSU could, for instance, be asked to oversee some $1.5 million of U.S. funds in order to ensure continuing U.S. participation and support of current UNESCO-sponsored activities in Major Program VI (Natural Sciences). There are possibilities of doubling this level if ICSU were to assume additional responsibilities with respect to the International Hydrological Program, the Man and the Biosphere Program, and certain aspects of the earth sciences activities. ICSU's willingness and capacity, structural and administrative, to assume this level of responsibility, however, will need to be thoroughly considered and discussed by all parties. In the longer term, ICSU represents an important, existing potential for enhancing international science cooperation.

7. U.S. Management Responsibilities. It is tempting to try to identify a single U.S. government agency to provide oversight, management, and funding for U.S. participation in the science activities of UNESCO. The National Science Foundation (NSF) is one obvious possibility, although the NSF has not been especially active in the area of multilateral science cooperation. Also, some adjustments in existing NSF procedures would have to be made. In addition, there are some

agencies, such as the U.S. Geological Survey (USGS), which have active and direct roles in current UNESCO programs. Nonetheless, given the uncertainties of using other international organizations, an enhanced role by U.S. agencies seems inevitable, particularly at this first stage of nonmembership in UNESCO.

Clearly, there must be a nongovernmental focus as well. A complementary, working relationship between a governmental entity, such as the NSF, and a nongovernmental one, such as the National Research Council, would provide a mutually beneficial, solid foundation for expanded and strengthened American participation in international science. Moreover, such a relationship might reinforce a parallel one at the international level between UNESCO and ICSU.

8. Next Step. The NRC assessment has profited from several hundred communications from American scientists and engineers who have participated directly, often in leadership roles, in the science activities of UNESCO. The resulting information base presents a useful starting point for a deeper analysis, an analysis which will require considerably more time and the involvement of a much broader segment of the international scientific community. In order that such an analysis be of value, it must necessarily relate UNESCO programs to those of other multilateral institutions having science as a significant part of their mandate.

9. The Future of International Institutions for Science Cooperation. This review strongly suggests that considerable thought needs to be given to the kinds of multilateral entities that might be established to deal with the contemporary requirements of international science cooperation. Before making premature judgments on selecting or formulating such entities, it is essential to consult with colleagues here and abroad regarding their concerns, interests, and aspirations. The time may have come to begin discussions of new models for facilitating international cooperation both for the advancement of scientific knowledge and for strengthening infrastructures in developing countries. Lessons can be learned from an examination of current practicies (e.g., IOC, ICSU/UNESCO, MAB) directed toward enhancing the complementary capabilities of nongovernmental and governmental organizations.

Science and technology are no longer secondary interests of governments; they have become primary influences on health, economic development, environmental conditions, and all other aspects of modern society. In view of this complex and pervasive state of science in the world today, it may be necessary in the longer term to consider radical institutional changes ranging from establishment of a separate entity for international science to a complete reorganization and restructuring of present institutions.

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CAPSULE SUMMARY OF UNESCO SCIENCE PROGRAM:
ASSESSMENTS, INTERIM ARRANGEMENTS, AND PROPOSED FUNDING LEVELS

Program	Preliminary Assessment	Interim Arrangement*	Proposed Funding**
Earth Sciences and Resources; Natural Hazards	High quality program that includes 80-nation IGCP, a program of keen interest to U.S. earth scientists, as well as important projects related to interdisciplinary studies of the earth's crust and data/mapping work. Activities related to hazard assessment and risk mitigation are also useful.	Specific program support to UNESCO to continue U.S. participation in IGCP ($200,000), and other activities ($650,000). Additional resources to cooperating international organizations, governmental and nongovernmental, on recommendation of a U.S. agency such as USGS ($1,150,000).	$2,000,000
Water Resources	U.S. scientists prominent in planning and implementation of 100+ nation IHP, which is concerned with water resource management, particularly in arid and semi-arid regions, and humid tropical regions. U.S. scientists make significant technical contributions and value UNESCO's facilitative role in fostering interactions with foreign colleagues.	Specific program support to UNESCO to cover U.S. share of costs ($750,000) plus support to a U.S. agency such as USGS (Committee on Scientific Hydrology) for additional related activities ($250,000).	$1,000,000
The Ocean and Its Resources	UNESCO is an important mechanism for international cooperative marine science activities. U.S. interest high in oceanographic components of the WCRP, IGOSS, and IODE activities of the IOC. U.S. scientists also involved in studies of marine environment and the continental margin, as well as work on coastal island systems under MAB.	Specific program support to UNESCO for the U.S. share of the current costs ($1,400,000), with additional resources for U.S. oversight and international research activities administered by U.S.agencies (such as NSF and/or PIPICO and USMAB) that would emphasize utilization of cooperating organizations ($1,100,000).	$2,500,000

Man and the Biosphere Program	U.S. scientists active in 105-nation MAB, which is concerned with integrated approaches to natural resource management in 4 areas: humid tropics, arid and semi-arid zones, urban systems, and conservation. UNESCO has facilitated global interations in this interdisciplinary program. UNESCO has recently responded to pleas to improve management structure. USMAB funding problems require resolution.	Specific program support to UNESCO ($900,000) plus support of USMAB-managed activities, including secondment of a U.S. science administrator to the UNESCO Secretariat and increased utilization of NGOs ($1,100,000).	$2,000,000
Natural Sciences; support of ICSU and other NGOs	Important support to research, training, and international cooperation in physical and life sciences. Includes support for NGOs working at the frontiers of science plus development of national infrastructures. Many U.S. scientists active through NGOs.	Direct support to NGOs, via ICSU, for UNESCO-related science activities ($1,500,000) and support through a U.S. agency, such as NSF, for additional related activities ($300,000).	$1,800,000
Informatics, Applied Microbiology, and Renewable Energy	All three areas are important, but except for applied microbiology and certain training aspects in the informatics area, the most appropriate forum may not be UNESCO.	Informatics: Funding through a U.S. agency, such as NSF, with possible use of UN agencies such as UNIDO or UNDP on advice of U.S. professional organizations ($500,000). Applied Microbiology: Direct contribution to UNESCO for MIRCENS ($125,000), plus additional support for related activities via a U.S. agency, such as NSF ($125,000). Renewable Energy: Support activities via UNDP ($250,000).	$1,000,000

*The consideration of UNESCO subprograms in Chapter 4 proposes more than one alternative interim arrangement. Only the preferred alternative is included in this summary presentation.

**The proposed figures include overhead costs.

Program	Preliminary Assessment	Interim Arrangement	Proposed Funding
Engineering Sciences	Emphasis is on training and development of engineering curricula; program management by UNESCO, but mostly financed by UNDP. Limited involvement by U.S. engineers in these UNESCO-directed activities.	Funding through a U.S. agency, such as NSF, to U.S. engineering societies and universities for work with international and regional professional organizations.	$700,000
Social Sciences	International social science mechanisms are weak and underfunded. UNESCO's program needs significant reform in content and management. U.S. social scientists have had limited involvement in UNESCO projects.	Funding through a U.S. agency, such as NSF, to support international cooperative social science research and training activities. U.S. share of subventions to ISSC should be maintained.	$1,000,000
Science Policy	A minor program with little, if any, U.S. participation; subject is of general interest (S&T planning and impact of S&T on society), but UNESCO program not particularly productive.	Funding through a U.S. agency (e.g., NSF) to support international science policy activities through U.S. institutions, possibly utilizing such organizations as OECD, OAS, ASEAN.	$750,000
		TOTAL	$12,750,000
		OVERALL U.S. MANAGEMENT OF SCIENCE PROGRAM	$1,250,000
		GRAND TOTAL	$14,000,000

UNESCO SCIENCE PROGRAMS

SUMMARY OF SUGGESTED FUNDING LEVELS ($000)
AND ALTERNATIVE INTERIM ARRANGEMENTS

		CURRENT ANNUAL PROGRAM	U.S. SHARE	ALTERNATIVE*	PROPOSED U.S. FUNDING
VI.	THE SCIENCES AND THEIR APPLICATION TO DEVELOPMENT				
VI.1	Natural Sciences	6,800	1,700	NGOs (e.g., ICSU, ICTNO) NSF/NRC/AID	1,500 300
VI.2	Engineering Sciences	4,600	1,150	NSF/NRC/AID	700
VI.3	Key Areas--Informatics, Microbiology Renewable Energy	6,000	1,500	NSF/NRC/AID FIT** GOs	625 125 250
VI.4-5	Social and Human Science	7,800	1,950	NSF/NRC	1,000
	SUBTOTAL VI	(25,200)	(6,300)		(4,500)
IX.	SCIENCE, TECHNOLOGY AND SOCIETY	6,200	1,550	NSF/NRC/AID	750
	SUBTOTAL IX	(6,200)	(1,550)		(750)
X.	THE HUMAN ENVIRONMENT & TERRESTRIAL & MARINE RESOURCES				
X.1	Earth's Crust	3,500	875	FIT USGS/NGOs (e.g., IUGS)	600 900
X.2	Natural Hazards	1,500	375	FIT USGS/NGOs (e.g., IUGS), IGOs (e.g., UNDRO)	250 250
X.3	Water Resources	4,400	1,100	FIT USGS	750 250
X.4-5	Marine Sciences	9,000	2,250	FIT NSF/PIPICD/USMAB	1,400 1,100
X.6-9	Ecological Sciences, MAB	7,400	1,850	FIT SECONMENT USMAB	900 150 950
	SUBTOTAL X	(25,800)	(6,450)		(7,500)
	TOTAL VI, IX, & X	57,200	14,300		12,750
	U.S. OVERSIGHT				1,250
	TOTAL				14,000

*The consideration of UNESCO subprograms in Chapter 4 proposes more than one alternative interim arrangement. The preferred alternative is included in this summary presentation.

**Funds-in-Trust = direct grant to U. SCO for specific activities.

Chapter 4

ASSESSMENTS AND INTERIM ARRANGEMENTS

INTRODUCTION

This chapter addresses the following UNESCO Major Programs and sub-programs:

VI. The Sciences and Their Application to Development

- Natural Sciences (VI.1); Technology and Engineering (VI.2); Key Areas (VI.3)
- Social and Human Sciences (VI.4); Key Areas (VI.5)

IX. Science, Technology and Society

- Relations (IX.1); S&T Policies (IX.2)

X. The Human Environment and Terrestrial and Marine Resources

- Earth Sciences and Resources (X.1); Natural Hazards (X.2)
- Water Resources (X.3)
- Oceans and Resources (X.4); Coastal and Island Regions (X.5)
- Environmental Sciences: Man and the Biosphere (X.6-X.9)

Comments on each of the above areas of activity are presented in three parts: (1) a program assessment, including potential impacts of a U.S. withdrawal, (2) suggested alternatives, and (3) a summary of preliminary findings.

Budgetary information is provided to give an order of magnitude of resources invested in the various activities (including particularly the current U.S. contribution of 25 percent). Frequently there is a significant multiplier effect in UNESCO-supported activities due to the contributions from national and other sources.

With respect to budgetary considerations it is important to note the following:

- Budgetary amounts for the various UNESCO activities include three elements: project costs, staff costs, and overhead. In UNESCO usage, program costs are the total of project and staff costs.

- One cannot predict how UNESCO will redistribute its budgetary resources given a 25 percent reduction due to the U.S. withdrawal. It is likely that certain areas may be affected more than others; however, for this analysis, a 25 percent cut across the board has been assumed.

- It is assumed that the funds available to support U.S. scientific collaboration in current UNESCO-sponsored science programs will be in the range of the present U.S. contributions to UNESCO for science, that is, about $14 million per year.

- Preliminary budgetary proposals have been included in program assessments as part of the process of understanding the implications of alternative interim arrangements. These proposals are intended to be helpful in planning and preparing budgets for future U.S. participation.

Several factors have been taken into consideration in suggesting alternatives to permit continued U.S. participation in UNESCO programs once the United States ceases to be a member (see Chapter 2). For certain activities of particularly high quality, augmented levels of resources are recommended. In other instances, reductions are proposed. In a few areas, questions are raised regarding UNESCO's involvement. Considerable attention is given to U.S. oversight requirements to properly plan, guide, and evaluate U.S. participation in multilateral scientific activities whatever the U.S. relation to UNESCO.

As noted, the current annual level of U.S. support of UNESCO science is about $14 million. The present review of UNESCO science programs results in a suggested support level of $12 to $13 million per year. It is important to underscore that oversight/managerial responsibilities on the U.S. side will require significant additional funding and possible adjustment in personnel policies within government agencies to administer these programs. It is proposed that $2 to $3 million per year be budgeted for the support of (a) U.S. oversight responsibilities, (b) new initiatives on development of global observational programs, and (c) resources for increased opportunities for U.S. scientists to participate in multilateral science programs, including scientific meetings sponsored by the international scientific unions and other nongovernmental scientific organizations. These budgetary amounts are, at best, first approximations that will need to be considerably refined.

MAJOR PROGRAM VI:
THE SCIENCES AND THEIR APPLICATION TO DEVELOPMENT

Natural Sciences; Technology and Engineering; Key Areas (VI.1, VI.2, VI.3)

This portion of Major Program VI includes UNESCO-sponsored activities in the natural (physical and life) sciences and engineering. The quality of effort and the role of UNESCO vary considerably among the program activities--these are addressed within the individual assessments for subprograms VI.1, VI.2, and VI.3. The current annual budget

for program costs (projects and staff) plus overhead is approximately $17.3 million--the U.S. share (25 percent) would be $4.3 million. Restricting attention to only program costs ($10.5 million), the U.S. share (25 percent) would be about $2.6 million per year. Other "outside" sources of support total more than $17.8 million per year.

It is proposed that support be provided UNESCO-related program activities through a variety of alternative interim arrangements at an indicative annual budget of $3.5 million per year.

Research, Training, and International Cooperation in the Natural Sciences (VI.1)

Assessment/Potential Impacts

This program area, involving international cooperative activities directed toward the advancement of knowledge and the strengthening of national research and training capabilities, is important to the health of world science. Program activities include a variety of advanced research and training courses in mathematics, physics, chemistry, and biology either on a regional basis or at international centers; university curricula development projects in the sciences; and support of regional and international scientific cooperation through subventions and grants to NGOs and universities. The long-standing collaborative arrangement between UNESCO and nongovernmental science organizations permits the building of more effective global networks of researchers at the frontiers of science; this leads, in turn, to fostering the development of infrastructures in the Third World. At the same time, increasing attention is being given to supporting activities in the regular UNESCO science programs to meet the specific needs of developing countries.

The current annual UNESCO budget for program costs (projects and staff) plus overhead is approximately $6.8 million; of this, the U.S. share would be $1.7 million. Considering program costs only ($4.1 million), the U.S. share would be about $1 million per year. Other "outside" sources of support, primarily UNDP, contribute more than $4.9 million per year, or somewhat more than the total for the regular UNESCO program.

This program area contains a large number of training and support activities involving the scientific unions and international centers such as the Trieste International Center for Theoretical Physics (ICTP), and the Johns Hopkins School of Hygiene and Public Health. Specialized organizations such as the International Cell Research Organization (ICRO), the International Brain Research Organization (IBRO), and the newly formed International Organization for Chemistry for Development (IOCD) provide advanced research training and services in support of the needs of the developing world. A large number of U.S. scientists are involved as teachers in an environment that encourages learning on the part of all participants.

Given the role of the International Council of Scientific Unions (ICSU) in the advancement of basic scientific research and in bringing

together the leading scientists of both developed and developing countries, many UNESCO activities critically depend on ICSU. Therefore, the UNESCO subvention (about $540,000 per year) to ICSU and the support of specialized activities by ICSU's constituent bodies are of particular importance.

The above-named activities and organizations depend to varying degrees on UNESCO support, but such support (largely catalytic) is particularly important for training activities in the developing world since UNESCO provides the intergovernmental link to countries and regions having limited affiliation with nongovernmental scientific associations. It is true that these collaborating organizations can receive funds from a variety of sources and do so. It is also true that limited administrative structures within NGOs proscribe their capacity to greatly augment program responsibilities were they to choose to do so. However, the nongovernmental scientific organizations and associations could provide a great deal more advice and assistance to UNESCO projects, thus increasing their quality and efficiency. Therefore, staff and administrative costs for NGOs need to be included in consideration of alternative interim arrangements. Furthermore, there would be significant U.S. oversight costs to be borne by an appropriate organization sensitive to U.S. interests (NSF and/or NRC) in channeling support to a variety of organizations and project activities.

Alternatives

A preferred interim arrangement is to provide the current level of U.S. contributions to UNESCO program costs in this area ($1.1 million per year) to the relevant nongovernmental organizations through ICSU. In fact, support of NGO-administered activities should be augmented to a level of $1.5 million per year. This level might include the seconding of a science administrator to ICSU. An additional provision of $300,000 for bilateral programs involving U.S. professional groups and universities is suggested, raising the total to $1.8 million per year. All of these arrangements would require agreements with the organizations concerned; support levels would have to include appropriate managerial, oversight, and overhead costs, which could be significant.

A second option for alternative support of these program activities would be an annual contribution to UNESCO (Funds-in-Trust, donations, etc.) for the U.S. share (25 percent) of regular program costs in this area, plus an estimated 10 percent overhead charge, or a total of $1.1 million. In addition, it is recommended that about $700,000 be provided to selected multilateral science activities through grants to the relevant nongovernmental scientific organizations. Such augmented support would raise the total level of support of VI.1 activities to $1.8 million per year, or about the same as the present U.S. contribution.

Preliminary Findings

1. UNESCO provides significant support to research, training, and international cooperation in the natural sciences. Beyond the subvention to ICSU, of importance to all countries, this program provides valuable advanced training through regional and international projects directed toward the needs of developing countries.

2. UNESCO provides a critical intergovernmental link to these developing countries. But these UNESCO-sponsored projects also depend on substantive contributions from the advanced countries primarily through the nongovernmental scientific organizations, particularly ICSU and its bodies. U.S. support of UNESCO-related scientific projects could be provided to nongovernmental organizations through ICSU. U.S. scientists would probably be able to maintain their current level of participation in these programs through the nongovernmental organizations.

3. These international cooperative activities could be complemented through grants to U.S. universities and professional groups.

4. It is important to establish and support an oversight capability within a body sensitive to U.S. interests, such as NSF and/or NRC. Certain aspects of these programs are relevant to the interests of the Agency for International Development (AID). Administrative overhead costs will be significant.

5. The overall record of VI.1 activities is reasonably good; the program has been of service to UNESCO Member States and to NGOs. With improved management, even further contributions can be foreseen and therefore this area is a candidate for increased funding.

Research, Training, and International Cooperation in Technology and the Engineering Sciences (VI.2)

Assessment/Potential Impacts

This program area is directed toward the improvement of institutional infrastructures in developing countries in the fields of engineering sciences and technology with particular emphasis given to meteorology, materials testing, quality control, data processing, standardization, and technical information services. The major thrust of the program is training, the development of engineering curricula through a variety of activities in the advanced countries, regional cooperation, and strengthening of national research and training infrastructures. The current annual UNESCO budget for program costs (projects and staff) plus overhead is approximately $4.6 million--the U.S. share is $1.2 million. Considering program costs only ($2.8 million), the U.S. share is about $700,000 per year. Other "outside" sources of support in this area, primarily UNDP and

Funds-in-Trust, provide more than $11.6 million per year or about four times the magnitude of the regular UNESCO program.

This program area includes a large number of support activities involving international engineering societies and organizations, as well as national centers in the advanced countries providing special training to meet the needs of the developing world. There are important interactions with UN-financed programs in support of strengthening technical and engineering training linked to specific development projects in the nations concerned. As far as UNESCO-directed activities are involved, there has been apparently limited participation from the U.S. technical/engineering community (no U.S. universities are involved in the provision of training needs). Considerably more analysis is required to understand the reasons for this situation. Presumably the U.S. engineering professions could contribute on a multilateral basis, particularly in the area of strengthening engineering curricula development and training of faculty. Significant levels of support for engineering sciences are provided from other sources, particularly UNDP. UNESCO plays a major role in the management of these funds, and with a U.S. withdrawal from UNESCO, there would be even less opportunity to influence their utilization of these funds.

Certain aspects of the program dealing with industrial policy and the provision of supporting technical services might be more appropriately managed by other UN bodies, such as the United Nations Industrial Development Organization (UNIDO). The UNESCO role should be directed more toward providing guidance in the development of engineering curricula and training of faculty.

Alternatives

U.S. support of UNESCO program costs in this important area of the promotion of engineering sciences is $700,000 per year. Instead of contributing funds directly to UNESCO, it is proposed that this level of resources, under monitoring by an appropriate body sensitive to U.S. interests (NSF and/or NRC), be provided through grants to U.S. engineering societies and universities working closely with international and regional professional organizations such as the World Federation of Engineering Organizations (WFEO). The objective would be to strengthen the involvement of the U.S. engineering community in UNESCO and in other UN engineering training and curriculum development activities.

A second option would involve direct support at a level of $350,000 per year for targeted activities within UN agencies such as UNDP, UNIDO, and the the UN Financing System for Science and Technology for Development. Support of engineering education activities to reinforce UNESCO projects could be provided at a level of $350,000 per year to U.S. professional societies and universities.

It is important to note that proposed levels of resources to be devoted to these activities would have to include appropriate managerial, oversight, and overhead costs.

Preliminary Findings

1. There has been only limited interaction with U.S. engineering societies and universities in this area of UNESCO interests. UNESCO has broadened its engineering interests to intersect with responsibilities of other UN organizations such as UNIDO. UNESCO should concentrate its efforts on engineering education.

2. As an alternative interim arrangement, U.S. engineering societies and universities could provide significant contributions to UNESCO-related educational activities through regional and international professional organizations such as the World Federation of Engineering Organizations (WFEO). A second alternative for supporting these activities would involve other UN organizations such as UNDP, UNIDO, and the UN Financing System.

3. It is important to establish an oversight capability within a body sensitive to U.S. interests, such as NSF and/or NRC, working with U.S. professional societies and engineering institutions.

Research, Training, and International Cooperation in Key Areas in Science and Technology (VI.3)

Assessment/Potential Impacts

This program area is directed toward the dissemination of technologies in informatics (information processing, systems development), applied microbiology (including biotechnology), and use of renewable energy sources. The current annual UNESCO budget for program costs (projects and staff) plus overhead is approximately $6 million--the U.S. share is $1.5 million. Restricting attention to program costs ($3.6 million), the U.S. share is about $900,000 per year. Other "outside" sources of program support provide a total $1.25 million per year.

Special attention has been devoted to these three rapidly developing fields because of their significance to the economic and social development of all countries and particularly because of the need to help developing countries master and effectively exploit such technologies for their national and regional benefit. UNESCO sponsors and supports important training activities, provides advisory services to assist the development of research policies and their infrastructures, and promotes the establishment of regional and global networks of research training and exchange of science and technology (S&T) data and information. Since there are other UN organizations charged with promoting applications and industrial development in some of these areas, one might question the wisdom of UNESCO's assuming responsibilities in many aspects of informatics and the renewable energy resource sector. International collaboration in all of these sectors merits strong encouragement; UNESCO may not be the most suitable or effective instrument.

With respect to informatics, UNESCO-related activities should be concentrated in work pertaining to training and much more limited advisory services for the development of strategies and definition of acquisition needs. A number of options are available to forward these latter interests outside UNESCO.

The UNESCO-sponsored activities in the area of applied microbiology and biotechnology are of particular quality--they are cost-effective and worthy of encouragement. It is recommended that serious attention be given to supporting the further development and strengthening of Microbiological Resources Centers (MIRCENs)* and their interactions in support of global and particularly of developing country interests. A modest increase in support of this work is proposed.

The renewable energy program should be examined in light of the suitability of other intergovernmental agencies concerned with energy R&D, as well as in the light of leadership that could be provided by U.S. institutions. It is proposed that modest support be provided for renewable energy activities through other multilateral institutions or through U.S. nationally managed programs designed to meet the needs of developing countries.

In the short term, the impact on U.S. interests of a U.S. withdrawal from UNESCO in these areas would be minimal--it is likely that U.S. scientists and engineers would continue to be invited on a personal basis to participate in activities pertaining to these three fields, particularly informatics and microbiology. In the long term, both U.S. interests and UNESCO capabilities would be harmed--the United States from diminished access to the global microbiological community, UNESCO programs from the loss of the considerable U.S. technological "know how" that has been developed in these three areas of concern.

Alternatives

In proposing alternatives, the considerations are different in each of the three areas. With respect to informatics, support is suggested to U.S. institutions via NSF ($500,000). In the microbiology area, support is also proposed to U.S. institutions via NSF ($125,000) in combination with direct support to MIRCENs via Funds-in-Trust ($125,000). Support of work on renewable energy sources could be provided directly to other UN agencies such as UNDP or UNIDO ($250,000). The total proposed level of support for all three areas is $1 million per year.

Another option is to provide support of informatics via Funds-in-Trust; MIRCENs via ICSU or ICRO and U.S. institutions; and renewable energy via U.S. institutions.

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*There are centers throughout the world; three are in the United States.

Preliminary Findings

1. UNESCO provides valuable support of the Microbiological Resources Centers (MIRCENs). The United States should consider increasing support of these high-quality activities.

2. Support of informatics projects should be limited to training and some advisory services for the development of strategies and definition of acquisition needs. Future U.S. support should be provided through U.S. institutions which may wish to utilize UN agencies (e.g., UNIDO or UNDP) and the International Federation of Information Processing (IFIP). Oversight by a U.S. body such as the Association for Computing Machinery (ACM) should be considered.

3. Modest support of work on renewable energy sources should be channeled to other UN agencies (e.g., UNDP) with close oversight by an appropriate U.S. body sensitive to U.S. interests.

4. The proposed alternative interim arrangements suggested above probably provide more direct oversight of substantive activities than is currently the case; however, the administrative overhead costs cannot be ignored.

MAJOR PROGRAM VI:
THE SCIENCES AND THEIR APPLICATION TO DEVELOPMENT

Social and Human Sciences; Key Areas
(VI.4 and VI.5)

Assessment/Potential Impacts

The purpose of VI.4 activities is to develop the social and human sciences by strengthening national potential for university and post-graduate training and research, regional cooperation, and international cooperation--the last through support to NGOs and subventions to the International Social Science Council (ISSC) and the International Committee for Social Science Information and Documentation (ICSSD).

Program VI.5 activities are directed toward improving education and advanced training in selected key areas such as history, geography, linguistics, anthropology, and the administrative and management sciences--with special attention to work and leisure activities, interdisciplinary cooperation for the study of man, and studies on the status of women. The current annual UNESCO budget for VI.4 and VI.5 program costs (projects and staff) plus overhead is approximately $7.8 million--the U.S. share is about $1.9 million. Restricting attention to program costs ($4.7 million per year), the U.S. share is about $1.2 million per year. Other sources of support in this area total $263,000 per year which are insignificant with respect to regular program support.

There is no way to know with certainty the actual extent to which the U.S. social science community benefits from participation in UNESCO.

On the level of the individual researcher, a number of U.S. social scientists interviewed indicated that the level of U.S. participation was "embarrassingly low." Among the reasons suggested were: (1) insistence within UNESCO upon country-specific "microprojects" as defined by the social science community within the country in question, (2) resistance to the global project approach, (3) inability of the U.S. National Commission for UNESCO to involve U.S. researchers, and (4) inability of official U.S. representatives in Paris to communicate with the U.S. social science community. On the other hand, there are issues under debate within the UNESCO context that are of major concern to the U.S. social science community.

Perhaps the most frequently cited example is the methodological debate that has been ongoing since the mid-1970s about the "indigenization" of social science, which is the contention of some developing countries that social science as it has developed in the West has predominantly served the interests of Western countries. It is argued on this basis that social science research in a developing country should be undertaken only by nationals of that country (or only with limited access by foreign researchers) and from a point of view that promotes their national interest. Here, according to some, lies the danger, because they believe that such a methodological prescription is not value free and "veers dangerously toward ideology." Clearly, if the United States is absent from this debate within UNESCO, it will be able to do very little to prevent this view from prevailing, with all of its implications for the direction, vitality, and legitimacy of international research in such fields as anthropology, sociology, and political science.

While U.S. researchers do not participate in UNESCO programs in a major way, withdrawal would cause the United States, as the single largest country contributor, to lose its ability to influence the substantive content of the organization's programs. U.S. social scientists undoubtedly would still be able to obtain UNESCO publications and possibly might even be able to participate in research projects, colloquia, and symposia on an individual basis. But, given the fact that the U.S. social science community is the largest and one of the most highly developed in the world, there would be no direct means of representing its interests in the design or development of programs. Similarly, the United States would lose even its present limited ability to influence the direction of ongoing UNESCO programs, particularly those in current "sensitive" areas, such as arms control and human rights.

Most of the social scientists interviewed were in agreement that withdrawal would have a negligible impact on current research projects ongoing within the U.S. academic community. However, there was also a good deal of speculation that future access by U.S. researchers to field sites in some Third World countries might well be constrained, either in direct retribution for the U.S. withdrawal or because the work was being conducted under UNESCO auspices. Some also suggested that U.S. researchers might find it more difficult to gain access to social science networks in the East European countries, since UNESCO is the principal forum for such contacts.

It was pointed out that many of the nongovernmental organizations dealing with social science depend in some measure on UNESCO subvention for their survival. Thus, organizations such as the International Political Science Association (IPSA) and others might become financially vulnerable and more limited in their substantive activities if their UNESCO support is reduced. But perhaps the most severe financial impact would be felt among the Third World countries (particularly in Africa) where UNESCO support for social science research accounts for a major portion of the work ongoing in those fields. Concerns about "indigenization" not withstanding, the United States would suffer, along with the remainder of the global social science community, if work in these countries were to be diminished through lack of support or if international communication of results were to be reduced.

The benefits to the U.S. social science community* of membership in UNESCO are both direct and indirect. Direct benefits accrue from the limited number of research projects and research colloquia and symposia in which U.S. scholars participate. Access is gained through these activities both to data and to collegial networks, i.e., "invisible colleges," throughout the world. Through UNESCO colloquia and symposia, scholars are able to exchange ideas, concepts, and theories that ultimately promote the advancement of their disciplines.

The Social Science Committee of the U.S. National Commission for UNESCO has urged repeatedly that UNESCO develop a more vigorous research program, similar to that which existed shortly after its creation when it sponsored research on international tensions and on racism. The committee has suggested that UNESCO inaugurate a major program on migration, which has important implications both for social science theory and for policy. Expansion or development of such substantive research foci would add directly to the benefits derived by the U.S. social science community.

U.S. social scientists also derive benefit from several UNESCO publications, including the World List of Social Science Periodicals and the World Directory of Social Science Institutions. It is reported that scholars make use of UNESCO publications in substantive areas such as the impact of new communication technologies on education, communications in developing countries, and the status of women. Some scholars apparently also find useful some issues of the UNESCO-edited Journal of International Social Science,** although there are questions about its overall quality and the cost of its subvention.

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*Thinking in this section benefitted from the ideas of Harold K. Jacobson presented in a statement before the Subcommittee on Human Rights and International Organizations and International Operations of the Committee on Foreign Affairs, U.S. House of Representatives, April 26, 1984.

**It should be noted that the editor of the Journal of International Social Science, Peter Lengyel, resigned recently due to unacceptable constraints imposed by the UNESCO Secretariat.

Indirect benefits of U.S. participation relate to the importance of promoting the worldwide development of the state of the art in global social science research, particularly with respect to the Third World. The argument here rests on the importance of gaining access to data and on the ability to exchange and/or test new ideas, concepts, and theories. It has also been suggested that another indirect benefit of a vigorous social science community within a country is the contribution that many of the disciplines can make on the quality of policy debate.

Alternatives

Prospects appear poor for making alternative arrangements for the United States to continue to play a role in UNESCO social science activities while not actually being a part of the organization. Given the limited involvement of the U.S. scholarly community in these programs and the serious methodological questions that have arisen with regard to the "indigenization" of social science research in the Third World, there would appear to be little incentive or justification for utilizing the Funds-in-Trust arrangement. It is conceivable that other UN organizations, such as United Nations Institute for Training and Research (UNITAR), United Nations University (UNU), United Nations Research Institute for Social Development (UNRISD), the International Labor Organization (ILO), the World Bank, or the various UN regional economic commissions (e.g., the Economic Commission for Latin America [ECLA]) might be able to pursue in a very limited way some of the social science activities of UNESCO.* However, this would require that other countries besides the United States also agree to channel funds through these alternative channels, and it raises the real prospect of serious duplication of effort within the UN system. Many of those interviewed for this study expressed skepticism about this approach.

Outside of the UN system, the opportunities for cooperation and collaboration in the social sciences are somewhat limited. While virtually all of the disciplines involved have active professional societies, the international arms of these nongovernmental organizations are generally weak and underfunded. In fact, most depend in some measure on UNESCO for subvention. The U.S. Social Science Research Council does maintain active working relationships around the world, and this mechanism could well provide a basis for bilateral research projects under some circumstances. There is also the International Social Science Council and the Inter-University Consortium for Political and Social Research, both of which historically have been primarily West-West in their orientation but could conceivably be strengthened and expanded to include a Third World component.

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*It is worthy of note that economics is not found under subprogram VI.4-5. Economics comes into the work of UNESCO under Major Program VIII, which is entitled, "Principles, Methods and Strategies of Action for Development."

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In the final analysis, the best alternative funding strategy if the United States follows through on its intention to withdraw from UNESCO would be to make the bulk of the funds available either directly to researchers or through the disciplinary professional organizations. Some portion of the funds might be reserved for the International Social Science Council to make up any loss in subvention due to U.S. withdrawal from UNESCO and also to undertake truly multilateral activities.

A logical new institutional focal point for funding international social science research to be carried out by U.S. investigators would be the Directorate of Biological, Behavioral, and Social Sciences (BBS) of the National Science Foundation. While it is possible that BBS might wish to evaluate grant applications and administer such additional funds directly, there may also be some substantive and symbolic value in establishing close collaborative relationships with the Social Science Research Council (SSRC) or the Commission on Behavioral and Social Sciences and Education (CBASSE) of the National Research Council. The substantive benefit to the program of this approach would be access to some of the leading U.S. social science scholars and the substantive input they could provide in determining priorities and direction. They could also provide assistance in strengthening social science research capabilities in developing countries. Moreover, as nongovernmental organizations, both institutions are probably better equipped to arrange site access and other types of scholarly activities--particularly with socialist and certain Third World countries--that might be difficult if initiated by an agency of the federal government. Some portion of the social science funds would need to be applied to staffing and overhead if the SSRC or CBASSE were charged with these new administrative responsibilities.

Preliminary Findings

1. Social science research needs UNESCO because of the links it provides to researchers and facilities world-wide and because most other international mechanisms are weak and underfunded. At the same time, there is need for significant reforms in the focus, direction, and management of UNESCO social science activities. If the U.S. withdrawal is carried out, it will be particularly important to earmark sufficient resources, about $1 million, through the National Science Foundation--and possibly to channel them through the National Research Council, the Social Science Research Council, and the Consortium of Social Science Associations in support of international cooperative social science research and training activities. Failure to do so would represent a serious setback for an already precarious international social science research environment.

2. There has been minimal involvement of the U.S. social science community in UNESCO projects. If the United States withdraws, interested scholars would still be able to obtain UNESCO publications and attend meetings on an individual basis.

3. There would be negligible impact on current U.S. research interests, but perhaps potential problems with future access to field sites in certain countries. Furthermore, a U.S. withdrawal from UNESCO would result in the absence of a U.S. voice in determining the substantive content and future directions of UNESCO social science activities.

4. Although UNESCO projects are a unique and important source of support to developing country interests, there are reservations about the quality of research and training activities, particularly the emphasis on "indigenization," which veers toward ideology. The UNESCO program in support of Third World social science research would be harmed by the loss of U.S. funding.

5. It is important to ensure that the full subvention currently provided by UNESCO to the International Social Science Council is maintained.

6. There are poor possibilities for alternative interim arrangements for supporting these UNESCO-related projects through multilateral channels. On the other hand, enhanced bilateral funding may facilitate new and better opportunities for collaborative research, particularly in the developing world.

MAJOR PROGRAM IX:
SCIENCE, TECHNOLOGY AND SOCIETY

Relations; S&T Policies
(IX.1 and IX.2)

Assessment/Potential Impacts

Subprogram areas IX.1 and IX.2 provide support for a variety of activities directed toward the development of science and technology policy structures and instruments for policy analysis of particular interest to developing countries. There has been concern with respect to the value of some of these efforts. The current annual UNESCO budget for Major Program IX (projects and staff costs) plus overhead is approximately $6.2 million--the U.S. share would be $1.6 million. Restricting attention to program costs ($3.8 million), the U.S. share would be about $960,000 per year. Other sources of support in this area provide a total of $1.7 million per year, or somewhat less than one half of the regular UNESCO program.

The level of visibility of the Program on Science, Technology and Society, and the extent of U.S. participation in it, are perhaps the lowest of any of the programs supported within the UNESCO science budget. A number of U.S. academicians and science policy administrators contacted in connection with this evaluation either had never heard of the program or were only vaguely aware of <u>some</u> of its components. In general, the activities undertaken through this program

would appear to be marginal to the interests of both the U.S. government and academic community.

Part of the reason for this low level of interest and involvement is that, unlike most of the other major elements of the UNESCO program, which are mostly disciplinary-based, there is only a very limited constituency for this activity. The subject is of some general interest to governments of developing countries and to the limited academic community concerned either with the planning of science and technology (S&T) policy or with the impact of S&T on society and particularly on economic development. For this reason, the United States derives little direct advantage from participation, except to the extent that it finds it useful to promote better S&T planning and application in the Third World.

The science, technology, and society program was among the earliest initiated by UNESCO, and it is closely associated with those Americans who were involved in the creation of the UN organization at the end of World War II. More recently, the science policy development theme has been criticized as too theoretical and not applied enough to the needs of the Third World. There is also some competition between UNESCO's science policy effort and the work of other multilateral bodies such as the Organisation for Economic Cooperation and Development (OECD) Committee for Science and Technology Policy.

Because the work undertaken within this program is comparatively marginal to U.S. interests, there will be few substantial negative consequences from withdrawal. One negative outcome may be the loss of cross-national knowledge about the science policies of other governments outside the OECD framework. Moreover, to the extent that the United States wishes to influence other governments to adopt its approaches to the development of S&T infrastructure and science policy, an avenue of contact would be closed off.

As a nation at the leading edge of S&T innovation, the United States is at least as concerned about the impact of science and technology on society as any other developed country. To the extent that this concern involves the need to enter into global dialogue with other technologically advanced countries and concerned developing countries, the U.S. withdrawal would deprive this country of one of the international forums available for analysis and discussion of these matters.

Although the Science, Technology, and Society program is of relatively minor consequence in comparison with other UNESCO activities, there are both symbolic and functional benefits to be derived by the United States from remaining a part of this program. At the symbolic level, there is the fact that the United States has had a historical commitment to the activity since the earliest days of UNESCO. Moreover, improving the S&T capabilities of developing countries has been (and remains) a primary development goal of the current administration. A U.S. withdrawal, if uncompensated with other initiatives, could appear to send a mixed message to developing country governments.

The other symbolic value of continuing support for this program has to do with its potential foreign policy benefits. UNESCO offers an opportunity to interact with scientists from countries where contacts with the West are limited only to official channels, and where informal

contacts and bilateral relations with the United States are not a current possibility.

On another level, the U.S. museum world has derived benefit from the advisory and consultative function that UNESCO has performed. The U.S. academic community also has benefited from some of the research projects supported under this UNESCO program, including an effort to develop a cross-national typology of science policy issues.

Alternatives

There are certain other UN organizations that could engage in enhanced science policy activities. These include the UN Center for Science and Technology for Development (UNCSTD), which has already focused on some of these issues, and the UN Development Program (UNDP).

The United States could also enhance its participation in multilateral and bilateral associations outside the United Nations. For example, OECD already is engaged in some of the same type of science policy work of concern to UNESCO, although it focuses primarily on policies of its member states. The UN Economic Commission for Europe (ECE) carries out similar work, and other regional organizations such as the Organization of American States (OAS) or the Association of South-East Asian Nations (ASEAN) could also expand their efforts in this area.

The United States, primarily on a bilateral basis, is already involved in cooperative research or action projects related to science policy and the impact of science and technology on society. Projects on the former are supported or conducted by the Agency for International Development and the National Institutes of Health, and on the latter by the National Science Foundation. These programs could be expanded. Another possibility would be working with developing country associations, such as ASEAN, which are involved in technical cooperation.

Finally, there are possibilities that NGO channels might be utilized to promote further work on the development of science and technology infrastructure. For example, the role of the International Council of Scientific Unions (ICSU) could be expanded to include a greater focus on the problem of building scientific infrastructure and coherent science policies in developing countries. In a similar fashion, intellectual attention to the impacts of science and technology on society could be promoted through formal or informal networks that include private foundations and academic centers of excellence with an interest in the problems both here and abroad.

Future funding of these potentially valuable activities will involve new institutional arrangements. With respect to those projects having to do with science policy and/or S&T infrastructure in developing countries, the U.S. Agency for International Development--which already has similar work ongoing--would represent the appropriate venue with possible collaborative arrangements with the National Research Council; particularly its Board on Science and Technology for International Development (BOSTID). In the case of the science, technology, and society projects, the professional oversight responsibility is less

obvious, but it may be possible for the NSF Directorate on Scientific, Technological and International Affairs (STIA) to assume responsibility for grantmaking and oversight in this area in collaboration with non-governmental organizations, for example, professional societies and the American Association for the Advancement of Science (AAAS).

In consideration of the resources currently provided these activities and drawing on results in the present review, it is recommended that funding on the order of $750,000 per year be provided overall for Program IX--Science, Technology, and Society activities under the oversight of a U.S. body sensitive to U.S. interests.

Preliminary Findings

1. It is difficult to make a convincing case that the UNESCO program on Science, Technology, and Society occupies a central role either in the operation of UNESCO itself or in the scientific and technological affairs within or between countries. Some of the activities are undoubtedly worth preserving, since they are also a part of the ongoing agenda of other organizations.

2. The current program must be judged relatively marginal to U.S. concerns and therefore deserving of support only insofar as it can be focused efficiently and appropriately on science policy directions and on the development of infrastructures responsive to the needs of developing countries.

3. With respect to a U.S. withdrawal from UNESCO, there might be some loss in learning about scientific policy trends in the developing world, as well as in the opportunity to influence developments. There has been some benefit from UNESCO work on developing a cross-national typology of science policy issues. On the other hand, there has been criticism that much of the UNESCO science policy work is too theoretical.

4. Regional science meetings at the ministerial level can be useful to developing countries by enhancing the prospects for a follow-up and by providing a forum for interaction with the global scientific community. However, such meetings at the European/North American level are of marginal value.

5. Alternative interim arrangements for supporting science policy projects through multilateral channels are feasible (e.g., OECD, ECE, OAS, ASEAN). It is proposed that funding be provided to an appropriate U.S. organization sensitive to U.S. interests (e.g., NSF, AID, NRC) that could support international science policy activities through professional societies and universities.

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MAJOR PROGRAM X:
THE HUMAN ENVIRONMENT AND TERRESTRIAL AND MARINE RESOURCES

The Earth Sciences Program
(X.1 and X.2)

Assessment/Potential Impacts

The earth sciences program of UNESCO is of reasonably high quality. The program is organized into a manageable number of discrete, focused projects, which are pursued in an essentially nonpolitical and scientifically competent manner. Program X.1 (The Earth's Crust and its Mineral and Energy Resources) and X.2 (Natural Hazards) are administered by the UNESCO Division of Earth Sciences with an annual combined project cost of $1.4 million; total annual cost of the program, including staff and overhead, is slightly over $5 million. These funds are supplemented by funds from sources outside of UNESCO that total annually about $2.3 million. The U.S. portion of support of the program is about $1.3 million. A significant number of programs in this area are of direct interest and concern to the American scientific community.

The major activity under subprogram X.1 is the International Geological Correlation Program (IGCP), which is unique in its joint sponsorship since 1973 by UNESCO and the International Union of Geological Sciences (IUGS), a nongovernmental organization. About 80 countries now actively participate in the IGCP. As a continuation of a program initiated by the IUGS in 1969 largely due to the efforts of U.S. earth scientists, the IGCP was established to provide a means to formulate worldwide correlations among geological strata. Since that time, the program has been broadened to include other kinds of geological research. Participation by U.S. geologists remains prominent.

More than 300 U.S. scientists are involved in the roughly 50 IGCP working groups that exist at any given time; U.S. scientists have served as leaders of about a dozen projects, with another 30 or so projects having U.S. members serving on international steering committees. U.S. scientists have served continuously on the IGCP Board and its Scientific Committee. U.S. participation has three principal aspects: (1) project activity including scientific research, symposia, field conferences, and the preparation and production of geological maps and reports; (2) Scientific Committee and Board activity, including the provision of expert advice in program development and planning; and (3) support for conferences on earth science topics that might lead to IGCP projects. U.S. participation reflects a combination of governmental/nongovernmental representation, which stems from joint sponsorship and the fact that access to foreign lands requires and involves government agencies and personnel.

While it is anticipated that U.S. representation will continue on both the IGCP Board and the Scientific Committee,* this is by no means

*U.S. Department of State Memorandum of Law, December 16, 1983.

totally assured. Appointments to the 15-member Board are made by UNESCO in consultation with the president of the IUGS; the Union apparently does have the final say in the appointments to the Scientific Committee. At the end of 1984, the term of the U.S. representative on the IGCP Board will expire. It is assumed that the United States will be asked to nominate a replacement. In fact, the entire leadership of the Board (chairman and the two vice-chairman) will be changing. It will be important for the future direction of the program that qualified persons be appointed.

There is some question as to how well U.S. scientists will be received in UNESCO earth sciences projects following withdrawal. Will U.S. ideas for new projects be approved? Will non-U.S. project leaders continue to seek the involvement of U.S. geologists? These questions cannot be answered at this time, but they are sources of concern among U.S. earth scientists. Even if the short-term answer was positive, in the long term, U.S. withdrawal from official membership in UNESCO could gradually reduce U.S. involvement in IGCP and other components of Program X.1 (e.g., data/mapping activities). Loss of U.S. scientific contributions to the program will inevitably reduce its quality and could have an adverse effect on interactions with Third World colleagues in particular. Over the past 10 years, the IGCP has provided a significant vehicle whereby scientifically valid global research projects are initiated, organized, and supported. Particularly helpful has been the possibility of engaging the cooperation of science communities and governments in Third World countries under the UNESCO flag. The IGCP projects provide useful international contacts for U.S. scientists that may not be available on a bilateral basis or through purely nongovernmental forums.

There are other elements to the UNESCO earth sciences program as well as the IGCP. For example, U.S. scientists have been active in developing new initiatives in the areas of mineral deposit modeling and remote sensing. Without official membership in UNESCO, U.S. association with these activities will have to be via the IUGS route, insofar as UNESCO utilizes the Union in program planning and development. The land-use planning activity is potentially an important one; the IUGS Research and Development Board has developed some specific suggestions for projects in this area. The work of the Lithosphere Commission (ICL) is of high interest to U.S. scientists, and the recent UNESCO General Conference action to increase support of the lithosphere program was warmly received. Publication of data and maps is another area of high interest to U.S. geologists and one in which U.S. participation is important. Finally, in the area of training, the U.S. geological community could be much more actively involved than it has been. U.S. expertise in map production and resource assessment are just two areas in which U.S. input is sought by colleagues in other parts of the world. Thus, there are several non-IGCP areas of the UNESCO earth sciences program in which U.S. geologists either are or could be usefully involved.

The natural hazards program (subprogram X.2) is a technically competent activity from which the U.S. scientific community benefits. U.S. scientists have participated actively in the work of the UNESCO

International Advisory Committee on Earthquake Risk and its regional subcommittees. The UNESCO program provides an opportunity for U.S. earth scientists to visit hazard-prone areas, study and evaluate disaster patterns and risks, and aid in the development of mitigation techniques, which could have a potentially beneficial domestic use. In the absence of formal U.S. membership in UNESCO, U.S. involvement in the natural hazards program is bound to decline, particularly since the program is exclusively under UNESCO management. U.S. ability to observe hazards assessment and mitigation activities under UNESCO auspices in other countries and to participate in information exchange programs might also prove to be more difficult.

In terms of program management, the earth sciences activities are not immune to the bureaucratic cumbersomeness that characterizes UNESCO activities in general. There is frustration at the comparatively small amounts of money that are available for actual project work as opposed to administration. Moreover, there is evidence that those programs with a strong scientific advisory mechanism, such as IGCP, tend to be of higher scientific quality than those solely directed at the staff level.

Alternatives

It is difficult, if not impossible, to identify a single alternative organization, either intergovernmental or nongovernmental, through which to channel resources to permit continued U.S. association with UNESCO earth sciences programs. There are many organizations doing important work in international geology and natural hazards. This report, however, has focused on identifying channels that provide association with present UNESCO activities. Three intergovernmental organizations involved in various aspects of the UNESCO earth science program--the United Nations Environment Program (UNEP), the International Atomic Energy Agency (IAEA), and the United Nations Disaster Relief Organization (UNDRO)--are specifically mentioned in the program and budget document. About a dozen nongovernmental bodies are also mentioned, the majority of which have some formal or informal linkages to organizations associated with ICSU.

Since it is expected that the United States will retain its formal membership in the IGCP, it may be possible to utilize the Funds-in-Trust arrangement to continue U.S. support for this program. On the other hand, the funds could be provided directly to IUGS. Perhaps the Union would also be willing to serve as an alternative channel for supporting other earth science activities. Earmarking funds for international organizations, whether intergovernmental or nongovernmental, would require a U.S. management mechanism such as the U.S. Geological Survey (USGS) of the Department of the Interior. This would be particularly important in the first year of nonmembership in UNESCO to facilitate the transition to a different support system.

In summary, a preferred option would involve a combined approach of direct support to UNESCO to compensate for loss in program support (including overhead at a level presumably to be negotiated), plus

support of the principal cooperating intergovernmental or nongovernmental bodies on the recommendation of a U.S. agent. Another approach is to invite one or more of the cooperating bodies, such as IUGS, to serve as the channel for the totality of funds involved. Details of program management and accountability would have to be worked out, as well as procedures for coordinating work with UNESCO. In both of the options, a strong U.S. focal point is necessary to provide guidance and oversight. A further option is to provide the totality of funds involved directly to a U.S. agent as, for example, USGS, for disbursement to these international programs, or in general support of the objectives of the programs, through whatever vehicle--multilateral or bilateral--is considered most appropriate. If this route is chosen, care must be taken not to dwarf the contributions of other countries. A total U.S. contribution of $2 million per year is suggested for the earth sciences area.

Preliminary Findings

1. The earth sciences programs are of reasonably high quality, and some mechanism should be found to continue to support them during this interim period. Those programs such as the IGCP, which are focused more on the advancement of science, tend to have higher U.S. participation than those concerned with training and education.

2. There is no single intergovernmental organization that can be identified as an appropriate alternative for the totality of the earth sciences program. As far as the IGCP is concerned, it is anticipated that the United States will retain its membership; therefore, a direct contribution to UNESCO through a trust fund arrangement is suggested. However, in the UNESCO budget the IGCP program represents only about 30 percent of the total program within subprogram X.1 and, in addition, there is the natural hazards program to consider (X.2). The cooperating organization with the broadest range of compatible interests is the nongovernmental ICSU union, the International Union of Geological Sciences (IUGS). The Union may be willing to serve as a channel for U.S. funding, but this will require a period of negotiation to determine their interest in such a role and to identify any constraints that may exist.

3. Programs such as the IGCP, interdisciplinary research on the earth's crust, data/mapping, and earthquake risk are considered especially successful. One of the reasons for this is the involvement of the concerned professional communities through nongovernmental organizations. Programs that have an active, expert advisory mechanism tend to be of higher quality than those that do not.

4. Earmarking a portion of the funds to enhance U.S. backstopping is absolutely essential. Increased management responsibilities can be anticipated no matter which alternative is utilized.

MAJOR PROGRAM X:
THE HUMAN ENVIRONMENT AND TERRESTRIAL AND MARINE RESOURCES

Water Resources
(X.3)

Assessment/Potential Impacts

Subprogram X.3, Water Resources, covers implementation of the third phase of the International Hydrological Program (IHP-III). It is concerned with establishing the scientific bases for the rational management of water resources. Particular attention is being devoted to the problems of arid and semiarid regions and of humid tropical regions. This program is closely related to subprograms X.2 (Natural Hazards), X.5 (Coasts and Islands), and X.6-9 (MAB activities). The annual budget for the Water Resources Program (projects and staff costs) plus overhead is about $4.4 million--the U.S. share would be $1.1 million. Restricting attention only to program costs ($2.7 million per year), the U.S. share is about $700,000 per year. Support for program activities from other sources, primarily UNDP, total $2.9 million per year, or somewhat larger than the regular UNESCO program.

U.S. scientists have played leading roles in the establishment, implementation, and planning of the International Hydrological Program. The program is structured around four major headings: (1) Hydrological Processes and Parameters for Water Projects; (2) Influence of Man on the Hydrological Cycle; (3) Rational Water Resources Assessment and Management; and (4) Education and Training, Public Information, and Scientific Information Systems. Eighteen themes and a multitude of projects and subprojects engage scientists, technicians, and decision makers in cooperative national, regional, and multilateral activities directed toward the rational management of water resources. The current phase, IHP-III, is directed toward pragmatic application of water resource management information by users through pilot/demonstration projects. Considerable emphasis is now being devoted to technician-level training to complement university and postgradauate training programs.

The IHP Program is guided by a 30-member Intergovernmental Council charged with establishing the program, evaluating it, recommending scientific projects, and coordinating international cooperation among member states, inter alia. A bureau of the Council works with the UNESCO Secretariat in ensuring the execution of its program in accordance with decisions of the Council. The United States has been represented on the Council and bureau since their formation. National committees in participating member countries form the network for program coordination and cooperation among projects--it is expected there will be 130 participating national committees in IHP-III by 1985. This shows the extensive multilateral collaboration at the base of the International Hydrological Program. There is considerable and necessary interaction with the scientific interests of other intergovernmental and nongovernmental organizations. UN specialized agencies involved include FAO, WHO, IAEA, the regional economic commissions and particularly WMO. The scientific content and significance of IHP program

definition, implementation, and achievement are essentially linked to nongovernmental organizations, particularly the International Association of Hydrological Sciences (IAHS), the International Association of Hydrogeologists (IAH), and the Scientific Committee on Water Research (COWAR) of ICSU. It is through these nongovernmental professional associations that the IHP Council is provided scientific and technical advice and guidance in undertaking complex studies and demonstration projects. They also provide important guidance on training and infrastructure development.

One should keep in mind that the IHP has been conceived as a long-term program with results potentially beneficial to all countries, particularly those in regions of the world experiencing grave water resource problems. The United States has benefited from this UNESCO-sponsored program through enhanced technical interactions with many countries and regions of the world where such contacts would have been difficult on a bilateral basis. UNESCO, as an intergovernmental organization, has facilitated these contacts among scientists. These interactions, including the significant technical contributions of U.S. scientists to the solution of problems elsewhere, may be increasingly restricted as a result of the U.S. withdrawal from UNESCO. In the short term, withdrawal may have only limited impacts on U.S. participation in IHP, since it is likely that many U.S. scientists will continue to be associated with this program in their personal capacity. In the longer term, however, the lack of official association with this intergovernmental program involving more than 100 nations could have serious consequences on both U.S. scientific relationships abroad, as well as on the quality of the overall UNESCO program.

With nonmembership in UNESCO, the United States loses its place on the IHP Intergovernmental Council and on the bureau of the Council where the United States has played a critical planning and leadership role. It will be possible to provide some leadership through participation in nongovernmental organizations closely associated with IHP. Scientific bodies in certain other countries are also expected to provide useful liaison with scientific groups, projects, and program developments elsewhere.

Alternatives

In view of the importance of the IHP to the U.S. scientific community, support for this program at a level of $1 million per year (at a minimum) is suggested. This funding is based on the current level of U.S. contributions to the UNESCO-IHP. However, there are opportunities to enrich and significantly expand collaborative work in this program. Such possibilities are being considered by the U.S. National Committee on Scientific Hydrology housed at the U.S. Geological Survey (USGS). In any case, the alternatives considered here with respect to current multilateral IHP activities will require strengthened national management structures (including dealing with personnel ceilings) and funds to support the participation of U.S. scientists in IHP and other multilateral water resource program activities.

The IHP is an intergovernmental program involving over 100 nations, and UNESCO's role as an intergovernmental focal point is important. Interim alternative arrangements are:

Alternative Option 1: Specific program support to UNESCO (Funds-in-Trust, donations, etc.) to cover 25 percent of the regular annual budget plus 10 percent overhead ($750,000 per year). An additional $250,000 should be provided to the U.S. National Committee on Scientific Hydrology, to permit program oversight and to support participation of U.S. scientists in IHP programs.

Alternative Option 2: Provide the same level of financial support ($750,000) through ICSU and/or one of its associated bodies. This option would also require support for the US National Committee on Scientific Hydrology as noted above.

Alternative Option 3: Provide the same level of financial support ($750,000) through the U.S. National Committee on Scientific Hydrology to guide contributions to specific IHP multilateral activities through other governmental and nongovernmental organizations. An additional $250,000 would be required to support oversight as noted above.

Preliminary Findings

1. The International Hydrological Program (IHP), an important global activity involving nearly 130 countries, is concerned with the rational management of water resources. In the current third (5-year) phase, particular attention is being devoted to problems of arid and semiarid regions, and humid tropical regions. The U.S. has played a leading role in program planning and implementation.

2. The IHP is guided by a 30-member Intergovernmental Council on which the United States is represented. Withdrawal will result in a loss in membership on the Council and on the bureau of the Council. In the short term, there may be only modest impacts on U.S. interests and on UNESCO programs after U.S. withdrawal, since it is expected that U.S. scientists will continue to be associated with the IHP in their personal capacity, assuming that funding is available to ensure such participation. In the longer term, the lack of official association could have serious consequences.

3. There have been important benefits as a result of United States participation such as enhanced opportunities for technical interaction and participation in global observational projects. UNESCO as an intergovernmental organization has played a critical role in making this possible.

4. It is important that the United States maintain a strong management structure in support of U.S. participation. The U.S. National Committee on Scientific Hydrology of the U.S. Geological Survey, backed

up by advisory services from the nongovernmental community of hydrologists, can perform this function.

5. Because of the nature of the IHP and the role played by UNESCO, the simplest, most efficient interim alternative arrangement is to make maximum use of Funds-in-Trust, donations, etc., coupled with a strong nationally managed effort to enhance U.S. participation.

MAJOR PROGRAM X:
THE HUMAN ENVIRONMENT AND TERRESTRIAL AND MARINE RESOURCES

The Marine Sciences Program:
The Ocean and Its Resources;
Management of Coastal and Island Regions
(X.4 and X.5)

Assessment/Potential Impacts

UNESCO marine science activities cover a wide range of interests, including promotion of collaborative research; strengthening of national infrastructures concerned with ocean circulation, climate, fisheries, and marine pollution; and environmental management of islands and coastal zones. There are three major units of UNESCO involved in these activities: (1) the Intergovernmental Oceanographic Commission (IOC); (2) the Division of Marine Sciences; and (3) the Man and the Biosphere Program (MAB). Taken together, subprograms X.4 and X.5 have an annual budget (project, staff and overhead) of about $8.8 million, of which the U.S. share is about $2.2 million. Restricting attention to program costs (project, plus staff), the total annual expenditure is about $5.5 million, of which the U.S. share is about $1.4 million. Support for program activities from other sources, such as UNDP and UNEP, totals slightly less than $4 million annually, which is a significant contribution to the overall UNESCO effort devoted to marine sciences. About half the project costs are associated with activities that are primarily scientific in character and are of particular interest to U.S. research interests. The United States is interested in all UNESCO efforts devoted to the effective strengthening of national and global capabilities concerned with the topics covered by X.4 and X.5 program activities.

About half of the resources available for X.4 and X.5 activities are administered by the IOC secretariat. The overall purpose of the IOC, an autonomous body established within UNESCO in 1960, is to promote the development of marine sciences through international collaboration. The IOC facilitates scientific planning and program coordination, assists scientists in member states to participate in international marine science programs, promotes exchange of oceanographic data, and sponsors education and training activities in marine science and technology to enhance the national capabilities of the developing countries. In recent years, the interests of the developing world have received increased attention in the work of IOC. In the view of some

U.S. marine scientists, this has resulted in less attention to issues of science and more to political/organizational topics. There is also some question pertaining to the management capabilities of the IOC, which are made more complex by the overall UNESCO bureaucracy.

About one third of the resources of X.4 and X.5 programs are administered by the Division of Marine Sciences, which has interests closely linked to the IOC. The Division has done a good job in providing training and specialized advisory services for developing countries; increased attention needs to be devoted to this area to enable the developing world to participate more productively in international observational research. U.S. scientists have played important roles in assisting the division to carry out its responsibilities.

Finally, a significant portion of resources in the X.5 area are devoted to work on coastal island systems. These activities are managed by UNESCO components concerned with ecological and environmental problems coming largely under the purview of the Man and the Biosphere Program. The U.S. plays a strong leadership role in all these aspects of the marine science program through a combination of governmental and nongovernmental participation.

U.S. withdrawal from UNESCO may affect these three areas of concern in different ways. The United States plans to retain its membership in the IOC, an intergovernmental organization, even if the United States withdraws from UNESCO. This will preserve official U.S. participation in the only intergovernmental organization concerned solely with international oceanographic problems, broadly speaking. It will be necessary to work out the details of channeling financial contributions and professional staff support to the IOC, but no serious difficulties are foreseen. The support of and participation in the activities of the Division of Marine Sciences and of MAB are more complex.

The United States has an important agenda for international cooperative interactions in the marine sciences area. UNESCO provides one of the most important mechanisms for facilitating and promoting such cooperation. All three areas (IOC, Division of Marine Sciences, and MAB) need to be considered in assessing current activities, including the impact of a U.S. withdrawal from UNESCO, and proposing interim alternatives for enabling U.S. scientists to continue to participate in these activities.

The Intergovernmental Oceanographic Commission (IOC). Three of the IOC activities are of particular concern to the United States: (1) the oceanic components of the World Climate Research Program (WCRP), (2) the Integrated Global Ocean Services System (IGOSS), and (3) the International Oceanographic Data Exchange (IODE).

The oceanographic aspects of the World Climate Research Program (WCRP) are of fundamental interest to the United States. The WCRP has as its objective the prediction on climate over periods of a few months to several decades. It is potentially one of the most economically important scientific programs being pursued by the United States. The United States is playing a leadership role in the WCRP, but active international cooperation among many countries is essential for its success. The oceanographic aspects of the WCRP are being planned

cooperatively by the Joint Scientific Committee of the International Council of Scientific Unions (ICSU) and the World Meteorological Organization (WMO) and by the Committee on Climatic Changes and the Ocean (CCCO) of the IOC and the Scientific Committee on Oceanic Research (SCOR) of ICSU. The activities of the CCCO are governed by an agreement between ICSU and UNESCO and a memorandum of understanding between IOC and SCOR.

The International Oceanographic Data Exchange Program is the only mechanism, for example, by which some oceanographic data are accessible to the many agencies in the United States that need these data. Data on subsurface ocean temperatures and salt content obtained by merchant and research ships of many nations are collected and transmitted through IGOSS. Many other IOC activities are also important to U.S. interests, although not at the same level as those highlighted above.

If the United States were to withdraw from IOC, it is conceivable that, over the course of time, alternative arrangements could be made for data exchange and planning for WCRP, IGOSS, and other programs. But this development of new arrangements would be costly in time and resources. The cooperation of many developing coastal states is essential for the world coverage demanded by the global nature of climate and ocean circulation. Without our continued membership in IOC, such cooperation would be difficult to enlist.

Division of Marine Sciences. The complementary activities of the Division of Marine Sciences provide considerable investment of resources through UNESCO regional offices for strengthening national infrastructures and training of scientific and technical personnel for enhancing marine science research programs and the study of ocean resources. Other important activities of this division are directed toward the rational management of marine systems and particularly studies on the marine environment and the continental margin involving close collaboration with ICSU and its associated bodies as well as several specialized agencies of the UN system. The division also disseminates research results and scientific information in the marine sciences through documents, reports, and a newsletter. With respect to coastal and island systems, the division supports a number of inter-disciplinary research projects on the productivity of coastal regions and studies pertaining to rational and integrated management of such zones.

Man and the Biosphere (MAB) Program. The major UNESCO support of MAB activities falls in subprograms X.6-X.9. There are also important contributions within subprogram X.5 pertaining to the management of coastal and island regions as they fall within theme 5 of the MAB program. This is particularly true of the activities related to integrated management of islands and coastal zones. Considerable attention is directed to the training of specialists.

All of the marine science areas could benefit from more efficient overall management and increased reliance on the competencies of other bodies such as WMO and particularly ICSU and its associated bodies for substantive input. Furthermore, the marine area has become increasingly preoccupied with development issues that are important in their own right but divert the focus from scientific objectives. International marine science would benefit more from being housed in a division or organization whose mission was purely or predominantly scientific than the current UNESCO institutional mix.

In the short term, there would probably be limited impact on U.S. and UNESCO science interests of a U.S. withdrawal from UNESCO provided there is continuity in funding to enable U.S. scientists to continue to participate in the activities discussed above. The United States would maintain its membership in IOC and pay its dues through the IOC Trust Fund. Other marine science and MAB interests can perhaps be maintained though U.S. associations with NGOs and the participation of individual scientists in UNESCO-sponsored activites. However, in the longer term, depending on the effectiveness of interim alternative mechanisms, these programs might be harmed.

Alternatives

The most efficient and effective mechanism for interim alernative support is to make maximum use of direct contributions to UNESCO (Funds-in-Trust, donations) for the current level of program (projects and staff) costs. Additional resources are recommended for oversight and international research activities to be administered by an organization that is sensitive to U.S. interests, e.g., NSF, with the assistance/advice of the interagency Panel on International Programs and International Cooperation in Oceans Affairs (PIPICO), and the NRC Board on Ocean Sciences and Policy (BOSP). In the augmented IOC program that PIPICO has proposed, it is hoped that consideration will be given to much greater participation of ICSU and its bodies as well as other governmental organizations. In any case, it is important to maintain the current level of Division of Marine Sciences and MAB activities contained in subprograms X.4. and X.5. USMAB is proposed as a body to oversee some of these activities.

A U.S.-supported international marine sciences program related to subprograms X.4 and X.5 is proposed at a level of $2.5 million--$1.4 million as a contribution to UNESCO (Funds-in-Trust, donations, etc.) and $1.1 million to be administered by U.S. organizations sensitive to U.S. interests (e.g., NSF/PIPICO and BOSP, and USMAB). Alternatively, the totality of available resources could be administered by NSF/PIPICO and USMAB, making full use of the capabilities of nongovernmental organizations and their U.S. advisory mechanisms.

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Preliminary Findings

1. UNESCO provides one of the most important mechanisms for facilitating and promoting international cooperative interactions in the marine sciences. Current activities cover a wide range of interests of importance to the U.S. marine science community. About half of these activities are primarily scientific in character, while the remaining pertain to strengthening infrastructures through advanced training and advisory services to meet the needs of the developing world. Some concern has been expressed about the wisdom of merging these two program objectives.

2. Marine science activities contained in subprograms X.4 and X.5 are administered under three functional components: about one half by the Intergovernmental Oceanographic Commission (IOC), one third by the Division of Marine Sciences, and the remaining portion pertaining to coastal island systems as part of the Man and the Biosphere Program (MAB). A U.S. withdrawal from UNESCO will affect these three functional areas, all of importance to the United States, in different ways.

3. The United States intends to maintain its membership in the IOC and will be able to profit from the unique collaborative interactions provided by that organization. It is important that the current level of U.S. support of IOC programs be maintained through contributions to the IOC Trust Fund, augmented by a nationally-managed program.

4. It is equally important to maintain the current level of Division of Marine Sciences and MAB activities contained in subprograms X.4 and X.5. On withdrawal from UNESCO, the United States would only be able to provide substantive guidance to these activities indirectly through its participation in NGOs associated with these programs. Financial contributions could be provided to UNESCO (Funds-in-Trust, donations, etc.) and to NGOs via a U.S. agency sensitive to U.S. interests, such as NSF (including the advice of PIPICO and BOSP) and USMAB.

MAJOR PROGRAM X:
THE HUMAN ENVIRONMENT AND TERRESTRIAL AND MARINE RESOURCES

Environmental Sciences: Man and the Biosphere Program (MAB)
(X.6-X.9)

Assessment/Potential Impacts

This section focuses on the subprogram areas (X.6-9) largely having to do with practical problems of natural resource management, which is the thrust of the MAB program. As noted above, portions of X.5 dealing with management of coastal and island regions are closely linked to the MAB program and objectives. The annual budget for programs X.6-9 (projects and staff costs) plus overhead is about $7.4 million--the U.S.

share is about $1.85 million. If one considers program costs only ($4.5 million), the U.S. contribution would be $1.25 million per year. Support for program activities from other sources is about $4.25 million per year, which is of the same order of magnitude as regular program costs.

Subprograms X.6-9 are being considered together since they form the core of the MAB program, which was extensively assessed on its tenth anniversary in 1982. The objectives of this program are (1) the general study of the structure and function of the biosphere and its ecological regions to provide an improved environmental information base for decision making; (2) systematic observation of changes brought about by man in the biosphere in order to provide new tools for environmental planning and resource management; (3) the study of the effects of these changes upon human populations to improve our ability to predict these effects and to develop new strategies to ameliorate the disruption of human lives; and (4) education of the public and the dissemination of information needed by decision makers and scientists. The initial MAB program is divided into 14 project areas to focus research efforts and facilitate coordination; half deal with particular kinds of geographic areas or ecosystems, the other half with impacts and processes such as conservation, demographic change, environmental perception, and pollution.

U.S. scientists have played leading roles in the planning, establishment, and implementation of the MAB program as well as of its predecessor, the ICSU-sponsored International Biological Program (IBP). This has been at both the governmental and nongovernmental levels. Since the creation of MAB, the United States has been represented on the 30-member International Coordinating Council, which guides the scientific content of the overall program, and has also held one of the four vice-presidencies of the MAB Bureau at all times. In addition, U.S. science administrators have been seconded to the UNESCO MAB secretariat until 1982 when U.S. agency cutbacks made this no longer feasible. There have been many hundreds of U.S. researchers actively engaged in MAB sponsored activities--national, bilateral, and multilateral projects. A small, yet effective, USMAB secretariat, currently located in the OES Bureau of the State Department, facilitates U.S. participation in MAB activities and serves the U.S. National Committee for MAB, which is charged with guiding and overseeing U.S. interests in national and international MAB projects. The U.S. Forest Service of the Department of Agriculture and the Park Service of the Department of the Interior have been particularly supportive of USMAB.

The UNESCO MAB secretariat and UNESCO as an intergovernmental organization have played vital roles in coordinating and facilitating the development of national projects and cooperative international interactions among research groups having common interests and problems. Participating nations have formed national committees to establish priorities and promote funding in support of projects. UNESCO has been instrumental in assisting the formation of these national committees and national programs as well as international cooperative arrangements; there are now some 105 functioning national committees. With the successful advent of integrated approaches to

natural resource management needs, the International Coordinating Council agreed to concentrate on four areas: (1) the humid tropics, (2) the arid and semiarid zones, (3) urban systems, and (4) conservation. These developments and the leadership of the secretariat have been appreciated by governments and were especially underscored at the fall 1983 session of the UNESCO General Conference.

Because of the integrated, interdisciplinary nature of the MAB program and the broad range of interests of UNESCO, UNESCO has been able to foster the active collaboration of natural and social scientists and has facilitated contact among researchers. There is fruitful exchange with the USSR in the area of assessing long-term effects to the environment in the context of the Biosphere Reserve Program. Important work is moving ahead on assessing problems in the arctic region. Serious problems of desertification and resource management in the Sahel and similar regions elsewhere in the world have received increased attention. The MAB program and framework are of considerable value to the United States as well as other countries in defining problems and facilitating integrated cooperative approaches to solutions. UNESCO provides an intergovernmental mechanism to structure collaborative arrangements designing future complex global observational programs involving ecological, geological, and behavioral processes. A proposed activity related to enhanced understanding of changes in the global environment is currently being considered by ICSU and affiliated nongovernmental scientific unions for possible implementation during the 1990s; a cooperative role with UNESCO and other U.N. agencies is envisaged.

There have been serious problems, on the other hand, with UNESCO program management--not so much of a political nature but rather of bureaucratic slowishness and ineptness in defining and delegating authority. There are signs that some of the difficulties are moving toward correction through a recent reorganization of staff responsibilities. Still, there is a need to streamline administrative procedures and to clarify and strengthen the role of the MAB Bureau in serving the scientific objectives of the program. This situation will require monitoring.

There have been problems on the U.S. side with respect to staffing and funding USMAB needs. Previously, the USMAB secretariat was housed in the U.S. National Commission for UNESCO and was reinforced by staff detailed from several federal agencies. Contributions, also from different agencies, provided a common fund from which USMAB activities were supported. However, a budgetary crisis developed in early 1983 which adversely affected USMAB funding and secretariat support. There are currently (summer 1984) signs that some of these difficulties may be in the process of being overcome with increasing interagency involvement in MAB activities and the intention of the Department of State to put funding and staff support on a more permanent basis through budgetary action. Identification of USMAB program activities budgeted at a level of $2 million per year plus supporting secretariat staff costs are basic needs. Consideration of the impacts of a U.S. withdrawal from UNESCO and the examination of interim alternative arrangements for MAB are rather academic questions if the USMAB situation is not resolved satisfactorily and on a longer-term basis.

The impacts of a U.S. withdrawal from UNESCO can be examined on a short- and long-term basis. In the short term, there would probably be minimal disturbance or effect on MAB activities--many of these are national projects or are being carried out through bilateral arrangements. The serious problem in this case is securing national support and funding continuity. In the long term, however, the problems are potentially serious. First, the United States would lose its ability to provide a vice-president on the International MAB Bureau as well as its position on the Coordinating Council. This means that the United States loses its leadership role in guiding and overseeing the international MAB program. Second, the United States would lose its official ability to interact with other MAB national committees although the UNESCO MAB secretariat might well continue to facilitate informal collaborative efforts. Even so, the extensive U.S. efforts, which have often involved substantial cooperation with other countries and significant direct support from UNESCO, could be endangered. Third, the official designation by UNESCO of biosphere reserves (there are some 40 reserves in the United States) could be compromised in the long term. It is possible that the extensive state and local, as well as national, resources currently provided these activities could be put in competition with other needs and that the commitment to maintain these reserves for long-term research purposes would be diminished. Certainly, cooperative interactions with other countries would become more complicated. Fourth, the United States would lose the international MAB mechanism to examine, promote, and assist the implementation of new observational programs. It would be hoped that the UNESCO MAB secretariat would facilitate USMAB involvement in longer-term programs. Finally, there is the reverse question concerning the effect on the UNESCO MAB program of a U.S. withdrawal. In the short term, U.S. scientists might be invited in their personal capacity to continue to provide leadership and guidance to specific MAB projects by the UNESCO secretariat. However, in the long term, the lack of official U.S. participation and provision of scientific leadership could seriously cripple international MAB unless suitable alternative means are found to involve the U.S. scientific community.

Alternatives

Taking into account the current level of U.S. contributions to UNESCO programs and the nature of multinational activities, an overall international program on the order of $2 million per year provides the basis for considering alternatives. This international program is distinct and above support requirements for a U.S. national program that has been proposed at about the same order of magnitude.

For the reasons noted above, there is no real alternative to UNESCO for administering the MAB program in the sense of designating another governmental or nongovernmental organization. There are over 100 nations participating in international MAB activities through UNESCO; the question of charging UNEP or an ICSU body to administer MAB would have had to be addressed at the time of establishing MAB. Therefore,

interim alternatives are proposed, the most efficient and effective one being maximum use of direct contributions to UNESCO (Funds-in-Trust, donations, etc.) backed up by USMAB-managed activities.

A second alternative would emphasize considerable project management by USMAB or some other body sensitive to U.S. interests. In both cases, there would be active involvement of nongovernmental organizations such as ICSU, including the International Union of Biological Sciences (IUBS) and the ICSU Scientific Committee on Problems of the Environment (SCOPE), and the International Union for the Conservation of Nature and Natural Resources (IUCN). Both alternatives include seconding a top-level U.S. science administrator to the UNESCO secretariat to provide substantive input and links to peer participation assuming agreement by UNESCO. Both alternatives also include significant managerial and overhead costs, although the second would certainly be higher. Funds must be earmarked in both alternatives to encourage innovative projects by U.S. investigators for multilateral exploratory work in fields related to MAB interests, such as the longer-term elaboration of a program on global change. For example, it is recommended that consideration be given to supporting the further development of the International Satellite Land-Surface Climatology Project cosponsored by the Committee on Space Research (COSPAR) of ICSU and the International Association of Meteorology and Atmospheric Physics (IAMAP). In all cases, a particularly sensitive matter pertains to ensuring the continuity of funding for scientific work over time--an "on/off" situation would be detrimental to all parties concerned.

In summary, interim alternatives for this overall MAB-related program area are as follows:

Alternative Option 1:

(1)	Funds-in-Trust, contribution (including overhead) for selected X.6-X.9 activities	$ 900,000/yr.
(2)	Secondment of U.S. science administrator, plus support services, to UNESCO staff	150,000/yr.
(3)	USMAB-administered X.6-X.9 activities, new initiatives, oversight/management costs	950,000/yr.
	TOTAL	$2,000,000/yr.

Alternative Option 2:

(1)	USMAB-administered program directly related to ongoing international MAB, new initiatives, oversight/management costs	$1,850,000/yr.
(2)	Secondment of a U.S. science administrator, plus support services, to UNESCO staff	150,000/yr.
	TOTAL	$2,000,000/yr.

Preliminary Findings

1. The Man and the Biosphere Program and related projects in Major Program X, concerned with integrated approaches to natural resource management, include activities that are valuable to the U.S. scientific community. The International Coordinating Council provides scientific guidance to the overall program, which is currently concentrated in four areas: the humid tropics; arid and semiarid zones; urban systems; and conservation.

2. The United States, which has provided leadership throughout the existence of MAB, will lose its official capacity to be a member of the Coordinating Council and Bureau of Officers. There may be limited impact on MAB activities in the short term assuming funds are provided to both UNESCO and USMAB in support of ongoing projects. However, there could be serious consequences in the longer term to both the United States and international MAB programs if suitable interim alternative mechanisms cannot be worked out to ensure active U.S. participation and association.

3. Because of the integrated, interdisciplinary nature of the MAB program and UNESCO's broad range of scientific interests, UNESCO has played a unique role of fostering collaboration of natural and social scientists, and coordinating the interactions of scientific groups in 105 participating countries. There is no real alternative to UNESCO in carrying out these responsibilities. There have been, on the other hand, serious management problems in UNESCO that may be in process of improvement--a situation that needs to be monitored.

4. It is of fundamental importance to put the USMAB program on a sound footing in terms of continuity of funding and staff support. Consideration of the impacts of U.S. withdrawal from UNESCO and this examination of interim alternative arrangements are academic questions if the current crisis facing USMAB is not resolved satisfactorily.

5. Because of the nature of the MAB program and the role played by UNESCO, the simplest and most efficient interim alternative is to make maximum use of direct contributions to UNESCO (Funds-in-Trust, donations, etc.) backed up by a significant level of USMAB-managed international activities. There should be increasing involvement of nongovernmental organizations such as IUCN and ICSU.

ANNEX A

UNESCO APPROVED BIENNIAL PROGRAM AND BUDGET: 1984-85

Major Programs		($000)
I.	Reflection on World Problems and Future Oriented Studies	$ 2,729
II.	Education for All	31,131
III.	Communication in the Service of Man	16,157
IV.	Formulation and Application of Education Policies	35,546
V.	Education, Training and Society	17,106
VI.	THE SCIENCES AND THEIR APPLICATION TO DEVELOPMENT	30,483
VII.	Information Systems and Access to Knowledge	12,194
VIII.	Principles, Methods and Strategies of Action for Development	11,052
IX.	SCIENCE, TECHNOLOGY AND SOCIETY	7,586
X.	HUMAN ENVIRONMENT, TERRESTRIAL AND MARINE RESOURCES	31,177
XI.	Culture and the Future	25,554
XII.	Elimination of Prejudice, Intolerance, Racism and Apartheid	1,630
XIII.	Peace, International Understanding, Human Rights and the Rights of People	5,540
	SUBTOTAL: Major Program	$227,885
	General Policy and Direction	25,780
	General Activities and Services	143,141
	SUBTOTAL: Direction and Services	$168,921
	TOTAL PROGRAM	$396,806
	Less Other: Balance of Currency Fluctuations, Absorption of Reductions, etc.*	- 22,396
	AGREED 1984-85 PROGRAM	$374,410
	TOTAL FROM OTHER SOURCES	$233,937
	GRAND TOTAL	$608,347

*Adjustments, including the absorption of reductions among various activities have not been distributed since they were not known at the time of preparing this table.

ANNEX B

UNESCO APPROVED PROGRAM AND BUDGET (1984-85)
SUMMARY OF UNESCO SCIENCE ACTIVITIES

The following tables provide an overview in gross terms of the 1984-85 UNESCO biennial program and budget for science activities. Adjustments including the absorption of reductions among the various program activities leading to the final approved biennial budget have not been distributed but rather taken out of overhead plus general policy and direction--this leads to a somewhat larger available program budgets and lower overhead charges than is actually the case. These tables have been prepared to provide orders of magnitude for major science program categories.

Explanation of table headings "Overhead, etc." and "Other" are given below.

- OVERHEAD, etc. - General activities; support, administration, communication services; general policy and direction, less amount (2.8 percent of original proposed budget), which will be absorbed during course of execution of program.

- OTHER - Additional resources provided in support of related activities with oversight by UNESCO; e.g., UNDP, UNEP, UN Financing System, Funds-in-Trust, etc.

UNESCO SCIENCE ACTIVITIES (1984-85)

Summary of Major Programs VI, IX, & X

($000)

		Project Costs	Staff & Indirect	Work Years	Regular Program	Regular Program + Overhead, etc. (64.3%)	Other
VI	The Sciences & Their Application to Development	16,063	14,419	336.5	30,482	50,085	36,203
IX	Science, Technology & Society	3,265	4,321	102	7,586	12,464	3,330
X	The Human Environment & Terrestrial & Marine Sciences	13,834	17,342	407	31,766	51,223	26,461
	TOTAL	33,162	36,082	845.5	69,244	113,770	65,994

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UNESCO SCIENCE ACTIVITIES (1984-85)

Major Program VI:

"The Sciences and Their Application to Development"

($000)

		Project Costs	Staff & Indirect	Work Years	Regular Program	Regular Program + Overhead, etc. (64.3%)	Other
VI.1	Natural Sciences	5,085	3,155	7.	8,240	13,540	9,873
VI.2	Technology & Engineering	2,068	3,482	81	5,550	9,120	23,305
VI.3	Key Areas in S&T	3,844	3,399	80	7,243	11,900	2,500
VI.1-3	Subtotal	[10,997]	[10,036]	[232]	[21,033]	[34,560]	[35,678]
VI.4	Social & Human Sciences	4,320	3,711	88.5	8,031	13,195	525
VI.5	Key Areas in Social & Human Sciences	746	672	16	1,418	2,330	---
VI.4-5	Subtotal	[5,066]	[4,383]	[104.5]	[9,449]	[15,525]	[525]
VI	TOTAL	16,063	14,419	336.5	30,482	50,085	36,203

B-3

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UNESCO SCIENCE ACTIVITIES (1984-85)

Major Program IX:

"Science, Technology and Society"

($000)

		Project Costs	Staff & Indirect	Work Years	Regular Program	Regular Program + Overhead, etc. (64.3%)	Other
IX.1	Science, Tech. & Society	1,249	1,379	32	2,628	4,319	360
IX.2	Science, Tech. Policies	2,016	2,942	70	4,958	8,145	2,970
IX	TOTAL	3,265	4,321	102	7,586	12,464	3,330

UNESCO SCIENCE ACTIVITIES (1984-85)

Major Program X:

"The Human Environment and Terrestrial and Marine Resources"

($000)

		Project Costs	Staff & Indirect	Work Years	Regular Program	Regular Program + Overhead, etc. (64.3%)	Other
X.1	Earth's Crust, Mineral and Energy Resources	2,202	2,041	47	4,243	6,971	3,960
X.2	Natural Hazards	612	1,281	30.5	1,893	3,110	668
X.1-2	Subtotal	[2,814]	[3,332]	[77.5]	[6,136]	[10,081]	[4,628]
X.3	Water Resources	2,411	2,891	68	5,302	8,710	5,822
	Subtotal	[2,411]	[2,891]	[68]	[5,302]	[8,710]	[5,822]
X.4	Ocean & Resources	3,714	4,370	102	8,084	13,281	6,490
X.5	Coasts & Islands	802	1,849	44.5	2,651	4,355	999
X.4-5	Subtotal	[4,516]	[6,219]	[146.5]	[10,735]	[17,636]	[7,489]
X.6	Land Use & Terrestrial Resources	1,932	1,875	43.5	3,807	6,254	4,306
X.7	Urban Systems	851	995	23.5	1,846	3,033	708
X.8	Natural Heritage	504	641	15	1,145	1,881	2,228
X.9	Env. Ed. & Info.	807	1,401	33	2,208	3,627	1,280
X.6-9	Subtotal	[4,094]	[4,912]	[115]	[9,006]	[14,795]	[8,522]
	TOTAL	13,835	17,344	407	31,179	51,222	26,461

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

OFFICE OF THE
ASSISTANT DIRECTOR
FOR SCIENTIFIC,
TECHNOLOGICAL AND
INTERNATIONAL AFFAIRS

October 21, 1983

Mr. Gregory J. Newell
Bureau of International
Organization Affairs
Office of the Assistant
Secretary of State
Department of State
Washington, D. C. 20520

Dear Mr. Newell:

In response to the Department of State letter of August 12, 1983 and in keeping with the agreement reached at the first meeting of the UNESCO study group on August 24, we are submitting the draft report on the UNESCO Natural Sciences Sector activities. NSF has coordinated the efforts of an interagency working group which included the National Research Council, the National Institute of Education, the Department of State, the Agency for International Development, the U.S. Geological Survey, the Forest Service, and the National Park Service.

We will be happy to assist in further refining the report either based on the comments of the DOS coordinated review or additional comments received from the Natural Sciences Sector working group.

Because of the tight schedule this draft is simultaneously submitted to the Department of State and the Natural Sciences Sector working group. Adherence to the schedule would not have been possible without the excellent contributions and spirited interactions among the agency representatives. We believe that a substantive contribution based on thorough discussion has been achieved.

We hope to have been of assistance to the overall Department of State effort and stand ready to assist in the final phase of this review.

Sincerely,

Peter E. Wilkniss
Deputy Assistant Director

Enclosure

NATURAL SCIENCES IN UNESCO

A U.S. Interagency Perspective

I. Introduction

The benefits of science to humanity are widely recognized and the necessity for international cooperation in all scientific fields has been understood for many years. UNESCO is designed to provide a multilateral, politically responsible organization, in which large or small cooperative science activities can be organized and carried out for the benefit of the member states. Historically, UNESCO has been a forum for discussion of emerging ideas and a seedbed for germinating major international cooperative research networks. The Science Sector of UNESCO includes Divisions of Science and Technology Policies, Scientific Research and Higher Education, Technological Research and Higher Education, Ecological Sciences, Earth Sciences, Water Sciences, and Marine Sciences, plus the Intergovernmental Oceanographic Commission. Outside of its Paris headquarters, it maintains five regional offices to facilitate projects and other activities.

II. Examination of Programs

(a) A brief overview of program objectives in the natural science sector and U.S. attitudes toward them. UNESCO's science programs are designed to provide access to important research localities, expertise, facilities, and other resources; prompt access to research data generated abroad from international projects; sharing of costs and expensive instruments needed for large-scale, international, scientific efforts; and scientific and technological assistance to LDC's.

United States attitudes toward UNESCO science programs are generally oriented to the need to: (1) obtain access to data about the scientific and technological capabilities of LDC's; (2) strengthen scientific infrastructure in developing countries; (3) facilitate future U.S. access to special resources abroad by fostering personal ties between U.S. scientists and those of foreign (especially developing and communist) countries; (4) facilitate research cooperation on global problems; (5) assist the establishment of foreign markets for U.S. instruments and technologies; and (6) promote selected U.S. foreign policy interests.

(b) Specific identification of program activities of value, marginal value, no value, harm to U.S. interests.

UNESCO's Natural Science Sector activities generally satisfy U.S. objectives and priorities. Activities reported to be distinctly beneficial to the United States include IBRO, ICTP, IGCP, IHP, IOC, MAB, and the Environmental Education Program (not described below). Some projects (ENGG, PGI) are potentially beneficial to the United States. No projects harmful to U.S. interests are reported.

A descriptive analysis of UNESCO's major science programs is presented below:

The Engineering Information and Training Programmes (ENGG) are geared to the needs of developing countries. There is some active U.S. participation by individual U.S. engineers. The direct benefit to the United States is said to be low because of insufficient availability of information about the activity.

The International Brain Research Organisation (IBRO) which, after five years of planning, sponsored the First World Brain Congress in Switzerland in 1982, is increasingly active in international neuroscience.

The International Centre for Theoretical Physics (ICTP) at Trieste, Italy, is the world's only effective focus for cooperative research and training with broad involvement of LDC, communist, and industrial countries, and in which U.S. physicists cooperate. It also facilitates discussions of future international cooperation and will host two major international physics conferences in 1984, with significant U.S. involvement.

The International Geological Correlation Programme (IGCP), cosponsored by UNESCO and the nongovernmental International Union of Geological Sciences, promotes research on the geological structure and history of the Earth. It is productive and widely respected as a scientific activity.

The purpose of UNESCO's International Hydrological Programme (IHP) is to develop the scientific and technological basis for the rational management of water resources, an area of human concern that clearly transcends national boundaries. A principal component of the program is to assist countries to develop and manage their water resources programs of research, technology transfer, and education. The major technical areas are hydrological processes and parameters for water projects, influence of man on the hydrologic cycle, rational water-resources assessment and management, and education and training, public information, and scientific information systems. The U.S. National Committee formulates policy for U.S. participation, which includes the private sector, universities, and government.

The Programme in Informatics (INFO) encourages research and training for improved understanding of computers and computer-based systems in science, technology, and economic development.

The Intergovernmental Oceanographic Commission (IOC) promotes research on the oceans which requires international cooperation, keeping in mind the needs of less developed countries (LDC's). One of its programs, the Oceanographic Data Exchange, provides U.S. access to the 60 percent of its data which are from foreign sources. Some programs of IOC are highly successful; others are unsuccessful.

One of UNESCO's best known science projects, Man in the Biosphere (MAB), involves 102 actively participating nations. MAB aims to foster and

provide an integrated research basis for understanding and managing the world's ecosystems. The United States holds one of four vice-presidencies of the International Coordinating Council and, in the United States, has a National MAB Committee with government and private-sector representatives, 12 active project directorates, and a small secretariat in the Department of State. Research topics of world emphasis include tropical forests, mountains and tundra, marginal lands, island and urban ecosystems, pollution, and development of an international network of Biosphere Reserves (now including 40 Reserve units in the United States). Certain MAB programs in the Division of Marine Sciences (DMS) foster international research on coastal and estuarine resources, including mangrove ecology. These are important U.S. research topics; most U.S. coastal and estuarine ecologists work in the nonfederal (academic and state) sectors.

The Natural Hazards Programme (NHP), administered by the Division of Earth Sciences, has two subprograms: (1) development of research knowledge for better assessment and prediction of natural hazards (earthquakes, floods, landslides, volcanic eruptions), and (2) mitigation by designing programs to reduce loss of life and physical damage from hazards. United States earth scientists participate in international groups that study earthquake patterns and frequencies and, as individual consultants, assist other countries to develop programs to reduce risks from volcanic eruptions.

The General Information Program (PGI) aims to increase national capabilities in the mobilization and use of scientific information and assist international cooperation in information exchange. It is the only viable international program working with LDC's on this subject and is thus of potential use to the United States in keeping abreast of LDC information needs and capabilities.

The Statistical Division (STAT), outside of the Science Sector, provides the United States with the only central source of statistical information (for non-OECD countries) about R & D in most countries of the world. United States specialists have participated in efforts to improve the usefulness of the data.

UNESCO's most important nonproject effort in the natural sciences is the encouragement of the International Council of Scientific Unions (ICSU) and its member Unions, all nongovernmental. These are highly successful vehicles for international cooperation by the private and academic sectors. UNESCO provides an environment in which the independent and nonpolitical character of ICSU can be protected and respected.

(c) Specific benefits to the United States from the Natural Science Programs.

The scientific benefits and contributions the United States obtains from participation in UNESCO include, but are not limited to:

- A multilateral, governmental aegis to study and attack problems of global significance and impact, such as the conservation and management of the world's ecosystems through MAB's network of

biosphere reserves, IGCP's global scale research on the geological structure and history of the earth, and NHP's international research on earthquake phenomena.

- Access to not otherwise available important research localities, expertise, facilities, and other foreign resources, particularly through such programs as IGCP, IHP, IOC, NHP, and MAB.

- Access to and exchange of research data generated abroad by international projects, such as the IODE, which provides the U.S. with 60% of all foreign source marine data, and the IHP, a major world forum for the exchange of water resources information.

- Assistance to LDC's to develop scientific capabilities and strengthen infrastructure through such programs as IHP, IOC, and MAB, whose projects provide training opportunities and also sensitize LDC governments to the global implications of water resource management, ocean resource exploitation, and environmental conservation, and the ENGG, INFO, PGI, whose projects are more specifically tailored to LDC needs.

- Sharing of access to and costs of international research facilities, such as the International Centre for Theoretical Physics at Trieste, and the large expenses of global scale research as pursued through the IGCP, IOC, and MAB programs.

- Opportunities for scientists to work with colleagues from other countries with whom they have no direct contacts for political or historical reasons, such as the Trieste Physics Centre, UNESCO scientific meetings, and the NHP's Balkan Regional Seismic Hazards Network, which enabled scientists from Bulgaria, Greece, and Turkey to cooperate together on a regional basis.

- Future U.S. access to special resources abroad, the promotion of U.S. models for scientific research, and the establishment of foreign markets for U.S. technologies, achieved through the personal and professional ties U.S. scientists build through UNESCO's natural science programs.

(d) An analysis of the extent, nature, and impact of the respective American professional communities on these activities.

Very high-level professional participation is reported for MAB, ICTP, IHP, and IGCP. At least eight U.S. Government agencies participate in MAB projects. The U.S. private sector participates in several activities (IHP, MAB, ENGG, IOC), but the extent is less well documented. U.S. scientists and engineers are or recently have been active as individuals in all the activities described above.

(e) Conclusions about the pluses and minuses of U.S. participation in the Natural Sciences Sector.

The opportunities offered by UNESCO for U.S. technical participation, representation, and influence in the Natural Science Programs are often

underexploited, leading in many cases to insufficient influence in scientific matters abroad, and to consequent frustration.

A main impediment is the lack of a well defined constituency in the United States for UNESCO as a whole, as the multilateral umbrella that makes possible the activities which, taken together, are agreed to be beneficial. The public impression is often that of a bewildering proliferation of disparate activities, all of seemingly marginal value.

Some UNESCO gatherings are politicized. But when the political posturing is completed, good technical work usually gets done, for the calibre of participating scientists from other countries is also high. Unfortunately for general U.S. impressions of UNESCO, the politicization makes better news copy and attracts more attention in the foreign-policy community than does technical progress.

UNESCO is an imperfect organization. United States dissatisfaction is mainly directed at UNESCO's organizational shortcomings, which may include high administrative costs, quality of staff recruited from LDCs, insufficient evaluation of projects, and difficulties in terminating projects. Dissatisfaction directed at failures to achieve one or more of the short-range priorities listed above often does not allow for adequate consideration of long-range priorities. UNESCO's support of science projects is diffuse and underfunded.

By committing U.S. resources to getting the best out of technical participation, the United States can exploit the opportunities offered by UNESCO, make it easier to work with other member-nations toward administrative reforms that are needed, and provide the U.S. scientific and engineering community with information about these opportunities.

(f) Consequences of U.S. nonparticipation in the work of the Natural Science Sector.

The withdrawal of United States from UNESCO science activities would lead to a significant reduction in the direct access the U.S. scientific community now enjoys to important data bases, localities, and scientific resources throughout the world. Withdrawal from UNESCO membership would result in a general decline in the leadership position the U.S. now holds in international science and also contribute to the further politicization of UNESCO in ways detrimental to U.S. national interests.

(g) Alternatives for promoting cooperation on matters of concern to the United States.

There are no organizations comparable to UNESCO in its global and multilateral aspects.

Other multilateral intergovernmental and nongovernmental scientific organizations, for example the WMO and ICSU, are often more successful with some international projects than UNESCO. Such organizations have demonstrated competences in special areas in which they and UNESCO share complementary interests and objectives. However, many of the LDC countries are not members of ICSU and prefer to deal exclusively with UNESCO because of its record of

achievements in these countries and, most importantly, its governmental aegis. The acceptability of ICSU to LDC's as an alternative method of international participation might increase if U.S. science and technology were not available through UNESCO programs.

Bilateral scientific cooperation has proved to be a successful mode for achieving most U.S. objectives with developing and communist as well as industrial countries, for kinds of projects not requiring concerted, multilateral action. For political reasons, some countries are unable to become U.S. bilateral partners.

For IOC, it was noted that modes of international cooperation other than UNESCO might or might not be free of problems which beset the Commission, but the cost to the United States would be significantly higher.

III. Examination of Other Aspects of U.S. Participation in UNESCO

The UNESCO framework presents certain problems inherent to any multinational organization. There are major deficiencies in three broad areas of (1) the overall United States' participation in UNESCO, (2) general management, and (3) program development. To varying degrees, these deficiencies pose impediments to achieving the United States' scientific objectives and linked foreign policy goals within UNESCO.

Within these three areas, specific impediments are:

U.S. Participation

- The United States lacks a central mechanism to coordinate and manage all aspects, private and governmental, of U.S. participation in UNESCO.
- The United States' negative attitude to its commitments, responsibilities, and participation within UNESCO hinders the achievement of U.S. national objectives.
- The United States' scientific representatives in UNESCO's activities do not always include leading members of the nation's scientific establishment.
- Information about UNESCO's activities and opportunities for cooperation are not disseminated within the United States. There is no public outreach program to stimulate and encourage U.S. involvement in UNESCO.
- The effectiveness of U.S. representation at the U.S. Mission to UNESCO is increasingly hampered by the drainage of resources and severe personnel limitations.
- The United States does not actively recruit qualified American personnel to serve in Secretariat or field positions and does not make available information about potential staff openings to the American scientific community.

General Management

- Member nations often impose new programs and projects on the UNESCO Secretariat without first ensuring that adequate financial resources and staff support is available for implementation.

- The Secretariat's manpower resources are severely overtaxed and financial limitations are compounded by the proliferation of projects.

Program Development

- The UNESCO membership and Secretariat frequently concentrate on political and organizational issues rather than on scientific objectives and action-oriented results. Many LDC's use UNESCO's governmental forum for overt political posturing.

- U.S. scientific research priorities are often masked or out-voted by other member nations. Criteria for program selection and project design are not always adequately developed before implementation.

- The proposed reorganization of the MAB management structure may heighten organizational sectoralism and adversely affect the scientific integrity and U.S. interest in MAB.

IV. Conclusions

The weight of tangible benefits over certain impediments clearly justifies continued U.S. participation in UNESCO.

Many of the science projects sponsored by UNESCO bring contributions and unique benefits to the U.S. scientific research effort and also promote selected U.S. foreign policy goals, including development assistance.

Nonetheless, achievement of U.S. objectives is often impeded by (1) insufficient resources to encourage participation of U.S. technical experts, (2) inadequate dissemination in the United States of information about opportunities in UNESCO, and (3) inadequate sharing within the United States of information about the extent and priorities of U.S. participation.

Nongovernmental, multilateral organizations and bilateral arrangements exist in other international fora and do offer vehicles for international scientific cooperation. However, such organizations would not replace the contributions and unique benefits the United States obtains from membership in UNESCO.

A stronger leadership role in the United States is necessary to obtain maximal benefits from scientific participation in UNESCO. A high level commitment to the central management and coordination of all U.S. participation, coupled with increased resources to support programs of U.S. priority and interest, are essential steps to be taken to achieve national objectives within UNESCO.

V. Recommendations

The scientific benefits the United States derives from participation in UNESCO clearly warrant our continued participation. However, the significant impediments enumerated above should be corrected.

Consequently, to achieve national objectives and goals within UNESCO, the United States should implement the following recommendations:

- The United States should take a strong leadership role and commit additional resources to specific programs of interest and benefit to the U.S.
- The United States should endorse, at the highest levels, a central mechanism to coordinate and manage U.S. participation in UNESCO.
- The United States should maintain, not reduce, the full complement of U.S. mission staff and further expand their role as the key liaison between UNESCO and the U.S. government and private sector. Science reporting should be given higher priority.
- The United States should pursue an active, not a passive role, in the recruitment of qualified American personnel to serve in key technical staff positions in the Secretariat and the field.
- The United States should establish a public outreach program to actively disseminate information about opportunities for participation in UNESCO's science programs among the U.S. community, both in government and the private sector.
- The United States should recruit and support the most qualified American scientists to participate in UNESCO activities to represent the U.S. scientific enterprise.
- The United States should exert influence within UNESCO to ensure that the proposed reorganization of the MAB management structure does not disrupt the integrity and operation of MAB.
- The United States should continue its efforts within UNESCO to ensure that adequate program planning and design precede actual project implementation.

MAB

U.S. MAN AND THE BIOSPHERE PROGRAM

OES/ENR/MAB
Department of State
Washington, D.C. 20520
Tel: (202) 632-2816 or 632-6527

address of Chairman:
Department of Anthropology
409 Carpenter Building
The Pennsylvania State University
University Park, PA 16802
tel: (814) 865-2509

March 21, 1984

The Honorable James H. Scheuer
Chairman, House Committee on Science and Technology
Subcommittee on Natural Resources, Agriculture Research and Environment
House of Representatives
Washington, D.C. 20515

Dear Chairman Scheuer:

In reconsidering your comments at the Hearing on March 15, concerning the impact on U.S. scientific research of a potential American withdrawal from UNESCO, I realized that it might be useful to you if I wrote you concerning the very immediate problem faced by the U.S. MAB program. As I testified, the National Committee does not see at this time any way the program can be continued beyond September 30 of this year irrespective of what transpires in relation to our proposed withdrawal from UNESCO. Frankly, we had hoped, based on last year's hearing and the State Department's assurances that international science would be supported, that the State Department would itself recommend a budgetary amendment providing the necessary $2,000,000 in funds required to keep the MAB program functional during fiscal 1985. Mr. James F. Malone, the Assistant Secretary for the Bureau of Oceans, Environment and Science, has indeed urged that such an action be taken but was informed that the urging of at least two assistant secretaries was necessary to stimulate State Department action on the matter. Despite extremely persistent attempts by Dr. Malone and others in OES to obtain an endorsement from Assistant Secretary Gregory J. Newell, Mr. Newell has refused to respond either positively or negatively. Thus, the situation for the MAB program is becoming critical and terminal.

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MAR 2 1 1984

WASHINGTON OFFICE
A COMMITTEE OF THE UNITED STATES NATIONAL COMMISSION FOR UNESCO
Commission Established by Act of Congress July 30 1946

It, therefore, appears that U.S. MAB survival is dependent upon a budget item to be inserted by the House Committee on Foreign Affairs and the House Committee on Appropriations, particularly the Subcommittee on Commerce, Justice, State and Judiciary. In the hopes of stimulating budgetary action on the parts of these committees, several organizations and numerous individuals from the private sector have already made their wishes known to Chairman Dante Fascell and Chairman Neal Smith. On behalf of U.S. MAB I hope to stimulate further letters from the private sector. Since I realize that you are a strong believer in the value of the U.S. MAB program, any help you can provide would be greatly appreciated and I am sure would be in the very best interest of solving this country's environmental problems.

I would be very pleased to provide any additional information the U.S. MAB program and problems if it would be of assistance to you.

Sincerely,

Paul T. Baker

Paul T. Baker
Chairman, U.S. MAB
and Head, Department of Anthropology
The Pennsylvania State University

PTB/ln

cc. Doug Walgren, Chairman,
Subcommittee on Science, Research and Technology

SCT

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FEB 29 1984

COMMITTEE ON SCIENCE AND TECHNOLOGY

Iowa State University of Science and Technology Ames, Iowa

Environmental Studies
141 Bessey Hall
Ames, Iowa 50011
Telephone 515-294-7252
Telex: ISU Intl Ames 9105201157

February 23, 1984

The Honorable Don Fuqua, Chairman
House Subcommittee on Science and Technology
Suite 2321, Rayburn House Office Building
Washington, DC 20515

Dear Representative Fuqua,

The impending withdrawal of the United States from the United Nations Education, Scientific, and Cultural Organization threatens the involvement that the American government and many of its citizens have in one of UNESCO's more popular and productive endeavors, the Man and the Biosphere Programme (MAB). The basic underlying principle of MAB is that the Biosphere; a thin, highly complex, but frighteningly fragile layer of soil, water, and air; is the life support system of our planet. Not only does a healthy, intact Biosphere support a diversity of animal and plant species, it supports Man and all of his activities - social, cultural, and economic. Economists tell us that production depends on the input of "land," "labor," "capital," "resources," and what they call "free things." We pay for land, labor, capital, and resources and can, therefore, determine their worth and use them accordingly. But, things that are considered to be free do not carry any value in our economic thinking. Things that carry no value are not conserved. So, what are these "free things" that appear in econometric formulae but are given no value? They are clean air, clean water, unpolluted land, and the regenerative capacity of biological resources. They are the goods and services that are supplied day in and day out by a healthy, functional Biosphere.

If we are to continue to enjoy the fruits, the "free things," that the Biosphere provides, we must learn how to provide a quality life for the citizens of all nations without damaging or destroying the life support system of the planet. We must place a value on the goods and services that the Biosphere provides. To do this we need to learn as much as possible about the structure and function of the various ecosystems that make up the Biosphere and we must develop educational materials and programmes for citizens and decision makers in business, industry, and government who will determine the short-term fate of the Biosphere, and for children and young adults who are the next generation who will inherit the stewardship responsibility and hopefully do a better job of it than we have. The Man and the Biosphere Programme is designed to do all of these things.

Because the Biosphere is not divided into 150 odd subunits that correspond to national boundaries, international communication, cooperation, and collaboration is required to address and resolve biospheric issues and concerns. The MAB Programme has provided an organizational structure and a stimulus for such an international effort. More than a thousand scientists and educators from nations on every continent are involved in MAB programmes and projects. Numerous nations have established biosphere reserves that can be used by scientists to study intact ecological systems. But, the MAB Programme goes beyond the rarefied atmosphere of international science and the ivory towers of academe. In also addresses the pragmatic issues that are faced by decision makers in the "real world" of national and international business and politics. As a matter of fact, the bringing together of natural and social scientists, educators, and decision makers is one of the most important and promising achievements of the MAB Programme.

We cannot allow the United States to terminate its involvement in the Man and the Biosphere Programme when we finally withdraw from UNESCO at the end of this year. The U.S. MAB Programme is alive and well in its own right and should be supported by the American government just as strongly as it is supported by the American people. I understand that on March 1 the House Subcommittee on Science, Research, and Technology (of the House Committee on Science and Technology) is scheduled to begin hearings on the implications of the American Withdrawal from UNESCO. I expect that MAB will be discussed thoroughly during these hearings. Efforts are underway to support the American MAB Programme by obtaining authorization of a $2 million line item appropriation for the FY 1985 State Department Budget. I strongly urge you to support this attempt to salvage a productive and vital programme. The amount being sought is small in comparison to the likely benefits that will accrue from the continuation of the Programme.

I would be glad to speak with you or members of your staff about any of these matters. Unfortunately, I am leaving for India on 25 February and will not be back in Ames until 13 March (I am involved with a research project in a biosphere reserve in northcentral India). But, please feel free to contact me after that time.

Sincerely,

Craig B. Davis, PhD
Professor of Botany
Coordinator of Environmental Studies
Secretary General, World Council for the Biosphere

PUBLIC AND SCIENTIFIC AFFAIRS BOARD

AMERICAN SOCIETY FOR MICROBIOLOGY

1913 I Street, N.W.
Washington, D.C. 20006
Telephone: Code 202, 833-9400

March 27, 1984

Ms. Carye Faye Brown
Subcommittee on Science, Research
and Technology
Committee on Science and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Ms. Brown:

As a follow-up to our telephone conversation, I am sending you a copy of the mailgrams concerning important microbiological programs developed under the United Nations Educational, Scientific and Cultural Organization (UNESCO) which were forwarded on March 14 to Representatives James Scheuer and Doug Walgren from Dr. Robert Williams, the current President of the American Society for Microbiology (ASM). In addition, I would like to refer you to an article in the enclosed issue of the February 1983 issue of the ASM News, pages 72-73, entitled "A World Network for Environmental, Applied and Biotechnological Research." Written by Dr. Rita Colwell, Vice President for Academic Affairs and Professor of Microbiology, University of Maryland, College Park, and President Elect of the ASM, the article describes the UNESCO program in environmental, applied microbiology and biotechnological research.

As we discussed, would you please make this information a part of the sub-committees' record on the "Impact on Scientific Research of the Proposal to Withdraw from UNESCO."

Please contact me or Mr. Robert Watkins, Director of Public Affairs, ASM, at any time should you require additional information. Our telephone number is 822-9229.

Sincerely,

Janet

Janet Shoemaker
Assistant Director
Public Affairs Office

JS/igp
enclosures

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1913 I ST NW
WASHINGTON DC 20006

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MAR 1
R. D. WATKINS

THIS IS A CONFIRMATION COPY OF THE FOLLOWING MESSAGE:

2028229229 MGM TDMT WASHINGTON DC 113 03-14 0608P EST
ZIP
HON DOUG WALGREN
HOUSE OF REPRESENTATIVES
WASHINGTON DC 20515
RECENTLY 10,000 MICROBIOLOGISTS FROM THE UNITED STATES AND MANY FORFIGN COUNTRIES GATHERED IN ST LOUIS FOR THE 84TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY (ASM) WHERE THE FOLLOWING STATEMENT OF CONCERN WAS ADOPTED BY THE COUNCIL OF THE ASM: THERE HAVE BEEN USEFUL AND IMPORTANT MICROBIOLOGICAL PROGRAMS DEVELOPED UNDER THE AEGIS OF THE UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO) AND OTHER UNITED NATIONS ORGANIZATIONS SUCH AS THE MICROBIOLOGICAL RESOURCE CENTERS AND THE GLOBAL IMPACTS OF MICROBIOLOGY CONFERENCES. THE ASM CONSIDERS THAT THESE GLOBAL ACTIVITIES SHOULD CONTINUE WITH THE FULL SUPPORT OF ALL MEMBER NATIONS

SINCERELY,
ROBERT WILLIAMS PHD PRESIDENT ASM

14:08 EST

MGMCOMP

A World Network for Environmental, Applied, and Biotechnological Research

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) program in environmental and applied microbiology and biotechnological research traces its origins back to 1946, when UNESCO supported research that was geared to the conservation and applied use of microorganisms. The International Cell Research Organization (ICRO) was founded in 1962, with support from UNESCO. Since that time, UNESCO activity in the microbiological field has been done in cooperation with ICRO and with the International Organization for Biotechnology and Bioengineering (IOBB) and the World Federation for Culture Collections (WFCC), both of which were founded in the early 1970s with UNESCO support and encouragement.

After the United Nations Conference on the Human Environment, which was held in Stockholm, Sweden, in 1972, the United Nations Environment Program (UNEP) joined the international scientific community via ICRO in setting forward a worldwide program for preserving microbial gene pools and making these materials accessible to developing countries. Additional support has been given by such United Nations agencies as the Food and Agriculture Organization (FAO), the World Health Organization (WHO), the United Nations Industrial Development Organization (UNIDO), and United Nations University (UNU).

A major development of the UNEP-UNESCO joint venture was the establishment of a world network of microbiological resource centers (MIRCENs). The objectives of the MIRCENs were established as providing an infrastructure for a world network which would incorporate regional and interregional cooperating laboratories geared to the management, distribution, and use of the microbial gene pools; reinforcing efforts relating to the conservation of microorganisms, with emphasis on *Rhizobium* gene pools in developing countries with an agrarian base; fostering the development of new and extensive technologies native to specific regions; promoting the applications of microbiology to strengthen world economies; and serving as focal centers for the training of manpower and diffusion of microbiological knowledge.

The first development of the world network was to establish the World Data Center (WDC) for microorganisms at the University of Queensland, Brisbane, Australia. The WDC was designated a MIRCEN, and at the WDC a master copy of the World Directory of Collections of Cultures of Microorganisms is stored. The WDC serves as a pivotal point for fostering development of culture collections in developing countries and in strengthening interactions with activities concerning culture collections in developing countries and developed areas.

Other MIRCENs which have been established include a regional MIRCEN in Bangkok, Thailand, at the Thailand Institute of Scientific and Technological Research, which serves the microbiological community of Southeast Asia via exchange of economically important microbial strains, training and fellowship programs, and promotion of research on organisms in areas of microbiology appropriate to Southeast Asia. A MIRCEN at the Karolinska Institute in Stockholm, Sweden, serves as a collaborating facility with the WDC in mapping potential metabolic strategies in fingerprinting of microorganisms.

Especially active MIRCENs are located at the University of Nairobi, Nairobi, Kenya, and in Porto Alegre, Brazil, at the Instituto de Pesquisas Agronomicas, and focus on nitrogen fixation. The latter MIRCEN collaborates closely with the Universidade Federale do Rio Grande do Sul in Porto Alegre. A MIRCEN also has been established at the Central American Research Institute for Industry in Guatemala, which serves Central America in the field of biotechnology.

Over the years, the MIRCENs in different areas of the world have focused on specific topics. For example, in the region of East Africa, the Nairobi MIRCEN focuses on *Rhizobium* technology, playing a pivotal role in the conduct of research and training concerning *Rhizobium* holdings in the region and dissemination of cultures and information pertaining to these activities. Training courses have been organized and symposia have been held on agronomy, plant breeding, physiology, crop protection for farming systems, and nitrogen fixation. Similarly, the MIRCEN at the Instituto de Pesquisas Agronomicas, in collaboration with the Universidade Federale do Rio Grande do Sul, has emphasized nitrogen fixation in Latin America, with the objective of promoting *Rhizobium* technology. A large culture collection is being maintained, with cultures distributed to research laboratories and inoculant factories. Training of researchers, extension workers, and industrial technical staff also is carried out.

The Bangkok MIRCEN is very active in culture collection activities and is responsible for the microbial culture collection development in that region, which includes Thailand, Indonesia, Malaysia, the Philippines, the Republic of Korea, and Singapore.

The MIRCEN at Ain Shams University, Cairo, Egypt, promotes activities in the fields of biotechnology and culture collections. More than 1,000 cultures are available in the various laboratories in that region with formal links to the MIRCEN. Training courses on conservation of microbial cultures and development of culture collections have been held at the Cairo facility.

The MIRCENs in the Caribbean region are coordinated through the Guatemala facility. Recently, a seminar, "Fuels and Chemicals from Biomass through Fermentation," was held in San Jose, Costa Rica, with the objective of promoting exchanges between Latin American scientists and eminent North American scientists in the field of energy from biomass. Subsequently, training courses in bioengineering have been held, with participants from Costa Rica, Nicaragua, Honduras, Equador, Guatemala, the United States, Uruguay, Peru, Venezuela, El Salvador, Paraguay, and the Dominican Republic.

The work under way at the MIRCEN at the Karolinska Institute has centered on development of microbiological techniques for applying pattern recognition methods for identification of microorganisms, as well as other rapid methods for identification, including microtiter plate methods. Environmental studies are also under way, as well as production of ethanol in liquid two-phase systems.

Several research projects are under way in the area of biological nitrogen fixation at the MIRCEN located at the University of Hawaii (NifTAL Project). The International Network of Legume Inoculation Trials continues at the Hawaiian facility in the NifTAL Project and MIRCEN, carrying out a three-step program, with the first experiment being development of inoculation recommendations based on strain selection information. The focus of the Hawaiian MIRCEN is nitrogen fixation by tropical agricultural legumes, with core budget support obtained through contract with the U.S. Agency for International Development and special funds also provided by several organizations, including UNESCO. In conjunction with the NifTAL Project, a MIRCEN at the Cell Culture and Nitrogen Fixation Laboratory at Beltsville, Md., also is carrying out studies on collection, characterization, documentation, and preservation of *Rhizobium*, on distribution of cultures of *Rhizobium* for research and inoculum production in developed and developing countries, and on microbial germ plasm of useful nitrogen-fixing organisms. The effort in *Rhizobium* biotechnology is a recurrent theme among the several MIRCENs around the world.

The WDC MIRCEN at the University of Queensland is of obvious benefit to world microbiologists.

As a sequel to a request from the Japanese Federation of Culture Collections, a group of specialists met in Paris, France, in July 1966, under the auspices of UNESCO, to consider problems relating to culture collections, and at that time it was recommended that a survey of culture collections be carried out. The International Association of Microbiological Societies (now the International Union of Microbiological Societies) section on culture collections agreed to survey the world culture collections, with the resulting publication by Wiley Interscience, New York, in 1972, of the *World Directory of Collections of Cultures of Microorganisms*. A second edition of the directory is funded by UNESCO, FAO, WHO, UNU, UNIDO, UNEP, and the European Economic Commission. The MIRCEN is now assembling the second edition of the *World Rhizobium Catalogue*.

A very important part of the MIRCENs are the training courses, such as a 6-week training course in legume-*Rhizobium* technology, which was held from 1 November to 10 December 1982 in Bangkok.

Thus, the importance of applied microbiology for the developing nations is significant, with benefits to be derived in fields as diverse as agriculture, the fermentation industry, public health, water supply and sanitation, environmental conservation and resource management, and production of food fodder and energy. Applied microbiology, now marching under the more trendy term *biotechnology*, is strongly interdisciplinary, interfacing engineering, applied mathematics, medicine, agriculture, the veterinary sciences, food sciences, toxicology, and other related areas.

The potential of biotechnology has been realized through the formation of the UNEP-UNESCO-ICRO panel on microbiology. The panel includes the U.S. representatives Martin Alexander, Department of Microbiology, Cornell University, Ithaca, N.Y., and David Pramer, Waksman Institute of Microbiology, Rutgers University, Piscataway, N.J. Under the auspices of the panel, "Global Impacts of Applied Microbiology" (GIAM) conferences have been held in major cities of the world over the years, including Stockholm, 1963; Addis Ababa, Ethiopia, 1967; Bombay, India, 1969; São Paulo, Brazil, 1973; Bangkok, 1977; and Lagos, Nigeria, 1980. The conferences bring together about 100 microbiologists from developed countries, with an equal number of colleagues from developing regions, where the conferences are held.

In addition to the GIAM conferences, about 60 training courses, based on a traditional ICRO pattern, have been held in developing countries on nitrogen fixation; fermentation technology; waste treatment and recycling; fermented foods; biological pest control; veterinary microbiology; environmental microbiology, including biomass and biofuel production; culture collection maintenance; and related subjects. The courses last about 3 weeks and include 15 to 30 participants, with not more than one-third originating in the host country. At least half of the conference is spent in bench work, with the faculty consisting of experts from the region supplemented with professors from abroad selected in consultation with the panel.

Clearly, the networks and MIRCENs have made a significant difference in the way microbiology is practiced in developing countries. This program has served to integrate microbiology infrastructures of developed and developing countries by promoting the holding of international conferences in developing countries and helping to introduce problems of developing countries into the programs of conferences held in developed countries. The success of these activities is due largely to a policy of cooperation at the working level, with many governmental, intergovernmental, and nongovernmental organizations participating, all of which provide a constellation of activities, with core funding from UNEP and UNESCO and with additional funding from FAO and UNIDO providing a high multiplier factor.

The MIRCENs network publishes newsletters, including *MIRCEN News*, information about which can be obtained by contacting Dr. E. J. Da Silva, Division of Scientific Research and Higher Education, UNESCO, Place de Fontenoy, Paris 7, France, or Professor T. Rosswall, Secretary of the Panel, Dept. of Microbiology, Swedish University of Agricultural Sciences, S-750 07 Uppsala, Sweden.

Rita R. Colwell

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March 12, 1984

The Honorable Don Fuqua
Chairman, House Committee on
Science and Technology
Suite 2321, Rayburn House Office Bldg.
Washington, D.C.

Dear Representative Fuqua:

The Board of Directors of the United Nations Association/USA, Hawaii Division, cognizant of the great importance of multilateral scientific and technological cooperation, as exemplified by continuing programs at the University of Hawaii and The East-West Center, many in cooperation with UNESCO, is distressed by the President's decision to withdraw from the United Nations Educational, Scientific and Cultural Organization.

We are aware of deficiencies in the administration and financing of UNESCO and the unfortunate politicization of some programs. However, we cannot accept that withdrawal from membership is the best way to solve these problems. We are gratified that National Security Advisor, Robert McFarlane, has reported to the Secretary of State that President Reagan is prepared to review the decision to withdraw if concrete reforms can be accomplished. In calling for an upgrading of U.S. representation at UNESCO McFarlane identifies an important reason why American preferences have been given so little respect in Paris. For example, no distinguished American scientists have been sent to participate in the review of UNESCO's science programs at its general conferences.

Since U.S. membership in UNESCO was authorized by joint resolution of the House and Senate, you have a special responsibility to follow up on what specific conditions would be acceptable to our remaining in the organization.

Daniel S. Sanders, President
Betty M. Jacob
Philip E. Jacob
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(for the Board of Directors

cc: Representative Daniel Akaka
Representative Cecil Heftel
Senator Daniel Inouye
Senator Spark Matsunaga